LONDON

JOURNAL OF MEDICINE

A MONTHLY

Record of the Medical Sciences.

VOLUME I.

BEING FOR THE YEAR

1849.

LONDON:

TAYLOR, WALTON, & MABERLY,

UPPER GOWER STREET, AND IVY LANE, PATERNOSTER ROW.

EDINBURGH: MACLACHLAN AND CO. DUBLIN: FANNIN AND CO.

PARIS: VICTOR MASSON.

LONDON:
RICHARDS, PRINTER, 100, ST. MARTIN'S LANE.

PREFACE.

During the twelve months which have now passed over our undertaking, we have met with even more encouragement and success than we anticipated. We may say, without risk of contradiction, that the London Journal of Medicine supplies a medium of communication with the profession, which was as much wanted in London as in Dublin and Edinburgh, where similar periodicals have long flourished, and must continue to prosper, so long as these great schools of medicine maintain their present reputation and efficiency.

Some zealous supporters have urged us to enlarge the Digest at the expense of the space devoted to Original Communications,—arguing, that we could then give the very same papers in a more condensed form, from the pages of our cotemporaries. This would, however, in our opinion, be a shameful want of reciprocity, and a scarcely honest plan of proceeding. At present, by devoting a large portion of each number to Select Original Articles, we not only give a higher character to the Journal, but we offer valuable matter to our cotemporaries in exchange for what we appropriate from their pages.

To the following gentlemen, who have contributed Original Articles to this volume, we tender our hearty thanks, feeling assured, that it is by the influence of their names, and by the value of their writings that the London Journal of Medicine has been placed in its present stable and influential position.

Alison, S. Scott, M.D., Edin.
Bird, Golding, A.M., M.D., F.R.S.
Bird, James, A.M., M.D.
Bowman, William, Esq., F.R.S.
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Smith, Tyler, M.D., Lond.
Smith, Thomas, M.D.
Snow, John, M.D., Lond.
Solly, Samuel, Esq., F.R.S.
Squibb, George James, Esq.
Tilt, Edward John, M.D., Paris.
Toynbee, Joseph, Esq., F.R.S.
Webster, John, M.D., F.R.S.
Williams, Charles J. B., M.D., Edin., F.R.S.

The Bibliographical Record has embraced critical, analytical, and descriptive notices of no less than one hundred and twenty-nine new works.

The Digest of the Journals has contained numerous abstracts, reprints, and translations, arranged under the respective heads of:—

1. Anatomy and Physiology.
2. Practice of Medicine and Pathology.
3. Surgery.
4. Obstetrics.
5. Materia Medica and Pharmacy.
6. Forensic Medicine.
7. Psychology.

We have published copious and careful reports of the proceedings of the Royal Medical and Chirurgical, the Westminster Medical, and the Edinburgh Medico-Chirurgical Societies, giving an account of the debates, as well as of the memoirs, read before these bodies. In doing this, we have generally avoided what was ephemeral, and calculated to increase the bulk, rather than the value of our annual volume. The proceedings of Foreign Academies are, with the exception of one month, incorporated with the Digest; and will so continue to be treated in future. The Surgical Society of Ireland we intend to report regularly under the division of the Journal reserved for Societies, as we think that its proceedings are not sufficiently known and appreciated in England.

The Obituary Record, List of Appointments, and Miscellaneous Intelligence, having been greatly appreciated, will be continued in the forthcoming volume.

From the above, it will be seen that no alteration is contemplated in the plan of the work, simply because none better has been suggested, and because the present is generally approved of.

For the future, our great aim will continue to be—what it has been—to place the busy or isolated practitioner as much as possible on a level with those whose leisure and locality afford them daily access to the best libraries,—and to add an annual volume to his collection, which shall contain all that is new and valuable, with as little as possible of what is ephemeral or useless.

London; 1st December, 1849.

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JANUARY 1849.—No. I.

ORIGINAL COMMUNICATIONS.

ON THE USE AND ADMINISTRATION OF COD-LIVER OIL IN PULMONARY CONSUMPTION.

By C. J. B. WILLIAMS, M.D., F.R.S., Professor of Medicine in University College, London; Consulting Physician to the Hospital for Consumption, etc.

THERE is no department of medical knowledge, which seems to me to stand so much in need of improvement, as that which relates to the operation of medicines. Even with regard to those most commonly used, it is surprising what a diversity of opinion prevails among different practitioners; and, as a necessary consequence, there is an almost equal variation in the modes and combinations in which each medicine is administered. Yet, it is pretty obvious, that as truth is essentially simple and constant, there must be much of error in such diversity of opinion and practice, and the sooner the truth is elicited by a careful and rational examination of facts bearing upon each subject, the more safe and satisfactory will our practice become.

The remedial influence of the COD-LIVER OIL particularly deserves this kind of investigation; not only because its mode of operation is a subject of much difference of opinion, but because the effects ascribed to it by many practitioners are of a very palpable and positive kind; and because such effects have not hitherto been obtained from any other remedial agent. The object of the present communication is to record the chief results of my own experience in the use of this remedy, in tuberculous and analogous diseases of the lungs. These results will be arranged briefly under the following heads:—

I. GENERAL RESULTS OF THE USE OF COD-LIVER OIL IN PHTHISIS PULMONALIS.

II. ON ITS MODE OF OPERATION.

III. ON ITS PREPARATION AND ADMINISTRATION.

I. GENERAL RESULTS OF THE USE OF COD-LIVER OIL IN PULMONARY CONSUMPTION.

I have prescribed the oil in above four hundred cases of tuberculous

disease of the lungs in different stages, which have been under my care in private practice, during the last two years and a half. Of these, I have 234 cases recorded in my note-books, with the results of the treatment at various intervals; these constitute the chief materials of the present communication.

Out of this number, the oil disagreed, and was discontinued, in only nine instances. In nineteen, although taken, it appeared to do no good; whilst in the large proportion of 206 out of 234, its use was followed by marked and unequivocal improvement; this improvement varying in degree in different cases, from a temporary retardation of the progress of the disease, and a mitigation of distressing symptoms, up to a more or less complete restoration to apparent health.

The most numerous examples of decided and lasting improvement, amounting to nearly 100, have occurred in patients in what is usually termed the second stage of the disease, in which the tuberculous deposits begin to undergo the process of softening, the common physical signs being defective movement and breath-sound, with muco-crepitation and marked dulness below or above a clavicle, or above a scapula, and tubular breath and voice-sounds towards the root, or inner part of the apex of the same lung. Such patients generally have had cough for some months, latterly with muco-purulent or opaque yellowish or greenish expectoration, and have begun to lose flesh, colour, and breath, in such a degree as to excite alarm, and induce them to seek further advice. With many, night-sweats had occasionally occurred; and hæmoptysis may have been present at a former period.

The effect of the Cod-liver oil in most of these cases was very remarkable. Even in a few days, the cough was mitigated, the expectoration diminished in quantity and opacity; the night-sweats ceased; the pulse became slower and of better volume; and the appetite, flesh, and strength were gradually improved. The first change manifest in the physical signs was generally a diminution and gradual cessation of the crepitus; the breath-sound becoming drier and clearer; but the dulness, and tubular character of the breath and voice-sounds were much more persistent, and rarely exhibited a marked decrease, until after several weeks' use of this remedy, in conjunction with regular counter-irritation. The tubular sounds, in fact, frequently became louder at the first removal of the crepitus, which in phthisis as well as in pneumonia, tends to mask the signs of consolidation. In several instances, however, in which I have had the opportunity of examining the patients under treatment, at several successive intervals of a month or six weeks, the gradual removal of the consolidations has been unequivocally proved, by the restoration of clearer vesicular breath and stroke-sounds to the affected spots. In several cases, in which the disease has existed long, the restoration has never been perfect; even where the health has been completely re-established, and all common symptoms of disease have entirely disappeared, there have remained perceptible inequalities in the breath and stroke-sounds; generally, with prolonged expiratory sound, which has more or less of a tubular note towards the root of the lung of the same side. These signs, if unaccompanied by decided dulness on percussion, I have learnt by the experience of many years,

not to consider as exceptional against recovery, for they appear to be dependent on the puckering of the texture, often with pleural adhesions and old deposits in the bronchial glands, so frequently found after death at the summits and near the roots of the lungs of persons who have not for many years exhibited symptoms of any pectoral disease.

As might be anticipated, a large number of the phthisical patients for whom I have been consulted, have been in the first stage of the disease, in which the tubercles or deposits are in the solid state. In these cases also, I have largely used the Cod-liver oil, and, so far as I have ascertained them, with not less satisfactory results; but a large proportion of these patients I have been unable to add to the numbers mentioned above, from my having seen them only once, or not frequently enough to enable me to determine with accuracy the results of the treatment. Such patients do not commonly consider themselves sufficiently ill to be under constant medical treatment; and although the good effect of the oil is commonly manifest in the abatement of cough and feverish excitement, and in the improvement of flesh and strength, yet the benefit is less speedy and obvious than in the more advanced stages of the malady. The physical signs of improvement are precisely the same as those which take place tardily in the second stage after the removal of the humid rhonchi; and in truth, the treatment by the oil combined with counter-irritation, where successful, seems to bring back the lungs from the second stage, that of incipient softening, to the first stage, that of simple deposit, which is tardier in its changes of increase or diminution, and may remain long stationary without any obvious alteration. The same remark is applicable to the chronic products of inflammation of the lung, which, as is known to the profession, I consider to approximate in nature to the higher class of tuberculous deposits.

The most striking instance of the beneficial operation of Cod-liver oil in phthisis, is to be found in cases in the third stage,—even those far advanced, where consumption has not only excavated the lungs, but is rapidly wasting the whole body, with copious purulent expectoration, hectic, night sweats, colliquative diarrhœa, and other elements of that destructive process by which, in a few weeks, the finest and fairest of the human family may be sunk to the grave. The power of staying the demon of destruction, sometimes displayed by the Cod-liver oil, is so marvellous, that I will attempt no general description, but will merely quote from my note-books brief abstracts of a few specimen cases, that shall plead for themselves.

Case I.—Mr. C., æt. 30, consulted me August 6, 1846, by the advice of Mr. Orrell, of Cheltenham. He has had cough for six months, with expectoration, latterly profuse and opaque; also progressive, and lately rapid loss of flesh, strength, and breath. He has had occasional profuse night-sweats; and now suffers from diarrhœa. Pulse 116, very weak. There is no appetite. *Physical signs:* Dulness in both upper regions of the chest; most on right side, where, under the clavicle, are well-marked cavernous sounds (gurgling and imperfect pectoriloquy), with muco-crepitation and obstructed breath-sound below, to the fourth rib in front, and behind to below the spine of the scapula. Obstructed breathing and muco-crepitation also above and below the left

clavicle. *Ter die sumat Olei Jecoris Aselli puri cochleare minimum, et gradatim augeatur ad cochleare amplum.* A pill, containing sulphate of copper, morphia, and creasote, was ordered every night whilst the diarrhœa continued; and the chest was to be rubbed every night with strong acetic acid, with a little acetum lyttæ. Diet to be nourishing.

Oct. 18. Very much improved in every respect. Has increased the oil to six drachms three times a day. Has gained nine pounds in weight; walks four or five miles every day, and can run without difficulty. Cough and expectoration trifling. Pulse, 90. Bowels now rather confined. Cavernous sounds are still heard below the right clavicle, but they are dry, and the crepitus below and at the apex of the left lung is now replaced by a clear but rather harsh vesicular breath-sound. Dulness very much diminished. Treatment to be continued. An occasional mercurial aperient to be taken.

Feb. 8, 1847. Has continued to improve in flesh and strength. Still coughs and expectorates a little. Takes still six drachms of oil three times daily. Cavernous sounds still present, but less distinct; with less dulness below. Sounds in left lung healthy. I have not seen this patient since, but have lately heard that he continues to enjoy a fair amount of health, and is engaged in active employment. He still continues to take the oil (but less frequently), having experienced a return of cough on suspending its use.

Case II.—Mr. K. (Walworth), æt. 56, of large frame, formerly at sea; accustomed to take fermented and spirituous liquors freely; for upwards of twelve months had been much harassed with cough and copious expectoration, now muco-purulent; formerly, often bloody. In the last few months had lost flesh rapidly, he thought to the amount of forty pounds in weight. Now confined to bed; countenance haggard, yet disfigured with acne. Appetite extremely bad; tongue loaded; often sweats profusely at night. Pulse moderate in frequency, but weak. This man had signs of disease in both lungs; but in one (I have omitted to note which) there were large cavernous sounds, with much surrounding dulness and obstructed breathing. The liver was also enlarged and tender.

The oil and liniment were prescribed as in the former case. All stimulants were prohibited, except bitter ale. In about three months, I visited him again, and found him so altered, that I did not recognize him. His face was now plump and smooth, excepting a reddish tip to the nose, the monument of his former excesses; his person portly, and even corpulent, which was natural to him; and he must have regained his lost forty pounds. His appetite had improved immediately from the time he began the oil; and he was soon able to take not only meat, but also fat and butter, which he had been unable to touch for years. There had been an equally speedy cessation of the night-sweats; but the cough and expectoration were reduced more gradually, and were still occasionally troublesome. The improvement in the state of the lungs was not equal to that in the general health, there being still the large loud cavernous sounds, and considerable dulness; but there was a great increase of clear vesicular breath and stroke-sounds, and a remarkable absence of crepitus.

I heard of this patient continuing in this improved state twelve months later; but I have had no account of him since. He was so convinced that the oil had saved him, and was keeping him alive, that he set about making it for himself, and shewed me a fair specimen of clear, pale, tolerably-smelling oil, which he said he was able to obtain from the fresh cod livers at the rate of about 1s. 3d. a quart. This may suggest a hint to others, who are anxious to prolong their lives at an economical cost.

Case III.—Mr. J. H., æt. 28 (of Brighton); of consumptive family, several members having died of phthisis. Often had cough and expectoration for several weeks. During the early part of 1846, in consequence of close confinement to business, observed some failure in his general health and strength. A slight cough with expectoration came on about midsummer, and gradually increased, with occasional night-sweats, until the end of September, when he consulted me. His pulse was then 80, and weak, face pallid and rather sallow, with a slight hectic patch on each cheek. Dulness, deficient breath-sound, and moist crepitation from second rib to scapula on left side; tubular expiratory sound in both supra-spinous regions. Liver large and very tender.

I prescribed a mixture containing nitric acid with iodide of potassium (a combination which I have used very extensively, with much advantage, in such cases), and a rubefacient liniment for the chest and hypochondria. In a month, the cough and expectoration were much diminished, the sweats had ceased, the liver was no longer tender, and he had improved in strength; but he continued thin, and the physical signs were but little altered.

I then prescribed the cod-liver oil, which he was soon able to take thrice daily, in half-ounce doses. In ten days the moist crepitus at the left apex had almost disappeared, there being only a mucous click sound on deep breath; but the dulness and tubular sounds were unaltered. I now advised him to go to Naples for the winter, and to continue steadily the use of the Cod-liver oil with the rubefacient. He did so; and improved so much in all respects, that he fancied himself well, and before the end of the winter removed to Rome, where, tempted by the sight-seeing which is the snare of that city, he took cold, and had slight hæmoptysis; and he was advised to discontinue the oil. He then went to Florence, and became better; but being in a weak state, was directed to take the iodide of iron.

June 8, 1847. He returned, looking very thin, and complaining of much weakness, loss of appetite, and cough, with considerable muco-purulent expectoration. The disease had advanced in the left lung, there being now gurgling above the clavicle, and the dulness and moist crepitation more extensive than ever. The tubular expiration was distinct above the right scapula, and the breath-sound rather harsh below the right clavicle.

He was again ordered the oil; and he has continued to take it, with a few intermissions, up to the present time. On August 27, the report was, that he was much better in flesh, strength, and appetite, than he had been for years; but the cough continued, and the expectoration (muco-purulent) amounted to nearly an ounce daily. The moist cavernous sounds in the left lung had now given place to pectoriloquy and

cavernous breath sound; and there were dulness and deficient breathing as low as the second rib, and half way down the scapula. The sounds on the right side were healthy.

I have seen this patient repeatedly since, and have found decided evidences of the gradual progress of consumptive disease in the lungs; but, considering his delicacy of constitution, and the rapid course which the disease exhibited in other members of his family, it is remarkable how slow his decline has been, and how much he has preserved,—or, under a favourable change of air, he has regained,—his flesh and strength. Experience has taught him to consider the oil as essential to his comfort, as well as the means of prolonging his life; and I entirely concur in this opinion, for before he began the use of the oil, more than two years ago, the prognosis which I formed of his case was, that he would not live three months.

Case iv.—Mr. H., æt. 21, consulted me in December 1845. Subject to occasional attacks of cough since childhood, when he had the hooping-cough severely; but was well and stout, often living freely, until five years ago, when he had a severe inflammation, said to have been in the liver; ever since which he has more or less suffered from cough and expectoration (often thick and yellow), shortness of breath, and occasional pain of left side. Moderate contraction of the left side of the chest, with dulness, complete in the lower half, where nothing is to be heard but loud large gurgling. Above, the breath and voice-sounds were loudly tubular, with a faint mucous wheeze in parts. There is also subcrepitation below the right clavicle.

This patient derived great benefit from iodide of potassium with nitric acid (sometimes with sarza), and external counter-irritation. For some time I considered the case to be one of dilated bronchi, which I have described as a sequel of pleuro-pneumonia; but a year later I found cavernous sounds (gurgling, and cavernous breathing) developed in the upper lobe of the left lung, and tubular sounds in the right inter-scapular space, indicating the phthisical excavation of one lung, and incipient deposit in the other; and this mode of development of phthisis out of the remnants of pleuro-pneumonia is by no means uncommon. At this time (the end of 1846) I put him on the Cod-liver oil; and he has continued to take it, with occasional interruptions, ever since. His flesh, strength, and general health, have been pretty well restored and maintained, so that he has been able to pursue his occupation of pianoforte tuning (and sometimes even playing the instrument at evening parties); but his cough, although slight, except when aggravated by fresh colds, is never absent; and the lesions of the left lung seem to remain stationary. But on the last occasion of my seeing him, about six months ago, the right lung remained free from disease.

Case v.—Miss W., æt. 19, consulted me in January 1846. Her brother died of consumption at her age. She had taken cold thirteen months before, and ever since had cough, aggravated in the preceding spring, when she repeatedly spat a little blood. She improved in the summer; but during the last three months had become much worse, with frequent cough, copious greenish expectoration, loss of appetite and flesh, profuse night-sweats, and cessation of the catamenia.

The physical signs were dulness and deficient breath-sound, with moist crepitation below the left clavicle. Small gurgling, and imperfect pectoriloquy, were heard in the left supra-spinous fossa. The breath-sound was obscure above the right scapula.

By my advice, she went immediately to Torquay, where, under the direction of Drs. Battersby and Madden, she took the Cod-liver oil, which had the effect of speedily restoring her appetite, and ultimately her flesh and strength, and of almost removing the cough and expectoration. I saw her on her return to town in May, when she considered herself quite well; and her plumpness and complexion, steady pulse, regular catamenia, etc., betokened a re-establishment of general health. On examination, I found still considerable dulness in the upper part of the left chest, especially behind and above the spine of the scapula, where deep breath produced a croaking. Here the vesicular breath-sound was indistinct, and there was still tubular expiration. I could not convince her that she was not perfectly well; for she had the unanswerable argument, that she was going to be married. And married she was shortly after; and I saw nothing of her till last spring (1848). She then reported that she had continued pretty well, although never quite free from cough and expectoration, until last winter, when, being anxious to have a family, she consulted a surgeon, who told her that her marriage was unfruitful because she was the subject of disease in the liver; and, with a view to correct this, he put her on a course of small doses of blue pill, with occasional leechings of the sides, forbad the malt liquor which she had been accustomed to take, and much lowered her diet. Under this treatment, as might have been expected, her strength soon failed, she became very thin, the cough returned with much purulent and albuminous expectoration, and the sweats, inappetency, etc., were as bad as in her former illness. When I saw her (in February 1848), she was confined to bed; the pulse was 120, weak; tongue furred, and all hectic symptoms were well pronounced. Disease had made sad havoc in the left lung, there being a large splashing cavity in the upper part, and the lower being dull and impervious to air, except with a short moist crepitus. Tubular sounds were loud also in the right supra-scapular region; and the vesicular sound there, and below the clavicle, was rough with incipient crepitus.

I had but faint hopes of her improvement when I again ordered the Cod-liver oil, and a return, as speedily as her stomach would bear it, to the most nutritious food, and a moderate allowance of malt liquor. She did improve, however; and so rapidly, that in a fortnight she was able to come down stairs; and her appetite having been speedily reestablished, she regained a considerable share of flesh and strength, with the pulse reduced to 90, and the cough and expectoration amazingly diminished. The change in the physical signs was more tardy and imperfect: the chief difference consisting in the cavernous sounds becoming drier and hollower, and crepitus longer, with less dulness in the lower region. The improvement continued, and advanced, during the early summer months, so that she was able to take daily drives; and, in spite of my prohibition, she even went to an evening public amusement. In August, whilst at the sea-side, she sat for some time exposed to a draught

of air, which brought on an attack of acute pleurisy on the right side; and the effusion from this, compressing the only useful lung, caused very distressing and dangerous dyspnœa. This, however, yielded to moderate antiphlogistic treatment; and in the course of ten days she was able to resume the oil and good living with benefit. But it is evident that, after such repeated trials, the constitutional powers are giving way, and the destructive disease is likely, ere long, to triumph.

Case vi.—Mr. B., æt. 21. First visited February 12, 1847. Had been out of health six months; cough came on about two months ago, and was soon attended with expectoration of much yellowish opaque matter, rapid loss of flesh, strength, and colour, with profuse night-sweats. Pulse now 120. Had a hectic flush. I found dulness and moist crepitation at the summits of both lungs; but above the right scapula the crackling almost amounted to gurgling, and a snuffling pectoriloquy was heard there at times, louder towards the outer margin of the scapula. Loud tubular voice and breath-sounds, with a somewhat tubular note on percussion, were heard in the inner and upper part of the right supra-scapular region.

This patient took the Cod-liver oil steadily for two months, using also a strong rubefacient liniment daily, and living well as his appetite returned. I did not see him again at that time; but heard that he had, to all appearance, completely recovered his flesh, strength, and general health, and entirely lost his cough. He returned to his occupation in a warehouse in the City, and continued well until the following winter, when he caught cold, and the cough returned, with other bad symptoms. Mr. Holding, of Bridge-street, Blackfriars, his medical attendant, had again given him the oil; but it somehow disagreed, and its use was not continued. When I visited him, in May 1848, I found him greatly reduced in flesh and strength, with a frequent feeble pulse, and large cavities in both lungs, with very little pervious tissue below them. I again prescribed the oil; but I do not know the result further than that he died in July. This case, taken in comparison with others, is useful in shewing that the good effects of the oil are not permanent, unless its use be persevered in long after apparent recovery.

Case vii.—Miss M., æt. 11, a delicate child, born in India. In the middle of April 1847, took the hooping-cough (which continued violent till I saw her), first with much fever, lately with profuse muco-purulent expectoration, and she has in the last two or three weeks been reduced to an extreme state of weakness and emaciation. The appetite was good, but the fits of coughing often ended in vomiting. When I saw her (June 25th, 1847), the pulse was 140, and the skin very hot; but this feverish state seemed to have been induced by the use of iron, which she had been taking for a few days. The chest was generally resonant, and the breath-sound puerile, except in the right scapular region, where there was dulness, and very large mucous rhonchus, almost amounting to gurgling. There was a little loose crepitus here and there, in other parts of both lungs.

I prescribed a saline with hydrocyanic acid, until the fever should abate; and then the Cod-liver oil; choosing, for its administration, the times after the fits of coughing, to ensure its being retained on the

stomach. I did not see this patient again, but I heard from her medical attendant, Mr. F. Davies of Gower street, that she rapidly recovered, in a few days losing the cough and expectoration, and soon regaining her flesh, and has continued well ever since. There is no decisive evidence of the existence of tubercles in this case, as the signs might be produced by circumscribed pneumonia, ending in partial suppuration, or in dilatation of the bronchi with purulent bronchitis; but the general aspect of the case was as unfavourable as in phthisis, which in truth often does originate from such sequels of hooping-cough.

Case viii.—Mr. D., æt. 25, applied to me (May 28th, 1847) complaining of cough of upwards of three months' duration, and in the last six weeks attended by copious purulent and clotted expectoration, dripping night sweats, and rapid emaciation. His breathing was very short, pulse very frequent and feeble. There was extensive dulness in the left chest, most complete above the fourth rib in front, where percussion caused gurgling, and on applying the stethoscope, large cavernous rhonchus was heard. Large tubular expiration in the right inter-scapular region. I prescribed the Cod-liver oil, and a liniment composed of strong acetic acid and chlorate of potass.

Aug. 11. Has steadily continued the treatment, and is now quite another person, his flesh and strength being completely restored, and his countenance indicating no ill health. Coughs only two or three times in the day, and expectorates as many yellowish sputa. He still finds his breath very short on exertion. I found considerable dulness remaining in the left chest, with absence of vesicular breath-sound down to the fourth rib. The cavernous sounds were, however, much less distinct than formerly, consisting of a bubbling between the second and third ribs on his speaking or coughing. The tubular expiration remained at the root of the right lung.

I have not seen this patient since, but have lately heard from his brother, who is a clerk in Messrs. Bouverie's bank, that he has continued well ever since, now fifteen months, and is able to pursue his employment.

Case ix.—Miss S. D., æt. 28, of consumptive family; first visited September 3rd, 1847, with Mr. Sawyer of Pentonville. Had a slight cough ever since she took some cold baths in the summer of 1846. A glandular swelling formed afterwards below the jaw, and continued until the last two months. In March 1847, a remarkable eruption of purpura appeared, and as it subsided, the cough became more troublesome, and the flesh and strength visibly declined. In the last two months she had become much worse, with distressing cough and shortness of breath, evening fever and night perspirations, absolute loathing of food, and rapid emaciation. A week ago, on returning from Margate, she expectorated a few teaspoonfuls of blood, since which the cough and tightness of breathing have been somewhat easier. I found her much emaciated, and very tremulous and feeble, with a rapid running pulse, difficult to count. There was complete dulness over more than the upper half of the left chest, with a mixture of large gurgling and pectoriloquy. Below, the stroke sound was less dull, and moist crepitus only accompanied the respiratory movements. The breath was weak,

with moist crepitation, also above the right clavicle; and large tubular expiration was loud at the root of the right lung.

This patient seemed in so hopeless a condition, and had such foulness of tongue and delicacy of stomach, that I did not like to subject her to the annoyance of a trial of the oil, and therefore prescribed an agreeable draught with nitric acid, and a linctus for the cough. I visited her again in a week, and found her no better, but obviously rapidly declining, with the same insuperable disgust at nourishing food. Considering that matters could not well be worse, I did then order the oil, and took my leave, expecting fully to hear of her death in a few weeks. However, I heard nothing of her for two months, when one of her sisters came to consult me about her own health. I learnt, to my surprise, that her sister was not only alive, but comparatively fat and well, having little to complain of but hunger, and that "she could not be allowed the run of the house to eat any and every eatable to be met with." This marvellous restoration of the appetite followed the first few doses of the oil; and the diminution of hectic, sweats, cough, and expectoration, speedily followed. In January 1848, I was requested to see her, not on account of any check in her progress, but because the catamenia had not returned as might be expected, in her improved state of health. On entering her room, I looked around it more than once before I could recognize my patient, so entirely was she altered in appearance, and she unquestionably was the healthiest-looking person present. The pulse was at 80, of moderate strength, and her tongue clean. The fair outside was not, however, matched by an equal improvement within. The dulness and cavernous sounds still continued in the upper half of the left lung, but with much less gurgling of liquid; and the short crepitus of the inferior parts of this lung had given place to a harsh and somewhat rough breath-sound. The tubular expiration remained in the right inter-scapular region, but the breath-sound was dry and clear above the right clavicle. That which seemed wanting to the general health, menstruation, was in a few weeks re-established under the use of a daily aloetic pill.

This lady called on me a fortnight ago, having been well and active ever since, only acknowledging a slight cough and short breath on exertion. She has continued stedfast in the use of the oil twice or thrice daily; and happily she believes and feels the truth of what I tell her,—that it is as the staff of life to her. On examining her chest on this last occasion, I found clear but irregular stroke and breath sounds on the left side as high as the second rib in front, and the middle of the scapula behind; above is dulness, and a dry cavernous sound of the breath and voice. There is also collapse of the walls above and below the clavicle. The tubular expiration continues in the right inter-scapular region, but in less intensity than formerly.

Case x.—Miss E. S., æt. 26, of diminutive delicate frame (a patient of Mr. Browne of Camberwell), was first seen by me September 11th, 1847. A brother and two sisters had died of phthisis. There had been a slight cough for six months; and one month ago, after a tepid bath, she coughed more violently than usual, and brought up about two ounces of blood. She was treated with leeches, acetate of lead, &c.,

and there was no return till four days ago, when hæmoptysis recurred in the absence of the catamenia, and about an ounce has been brought up daily. The pulse was frequent and feeble. No heat of skin. Considerable dulness in the left chest, chiefly in its upper part. Moist crepitation superseding breath-sound below the left clavicle. Tubular breath-sound (superseding vesicular) above left scapula. Tubular expiration, with vesicular inspiration, above right scapula.

Leeches, followed by cupping-glasses, were ordered to be applied below the left clavicle. Draughts with nitric and hydrocyanic acids and hyoscyamus. The acetum cantharidis, diluted with acetic acid, to be rubbed on the chest. When I saw her about a month after, I found that the hæmoptysis had not returned, but the cough continued, with much purulent and albuminous expectoration; and hectic, with sweats and progressive emaciation, had become distressing. I now detected a considerable cavity in the left lung. The oil was now prescribed, but owing to the weakness of her stomach, she was unable to take more than a small teaspoonful three times daily; and when I saw her after the lapse of three or four weeks, the consumption was obviously making rapid progress; the bones projecting so much, that it was difficult to auscultate, and the cavity having extended its signs and dulness more than half down the left side. I strongly urged an increase in the dose of the oil, and recommended as a vehicle the compound infusion of orange-peel with a little hydrocyanic acid; and by the aid of this she was enabled to take above a dessert-spoonful thrice daily. After this the improvement was manifest and progressive, although much more gradual than in the last case. In April the catamenia returned, and she had regained her ordinary amount of flesh, whilst the cough and expectoration were very trifling. The signs of the cavity continued, but within narrower limits, and a pretty clear stroke-sound and vesicular breath-sound were now found in many parts of the scapular and mammary regions, which before were quite dull. The improvement has continued up to the present time, as far as regards the phthisical symptoms; but when I last saw her, there had been so much mental depression as to excite apprehensions of another disorder, to which there is a strong family predisposition.

Case xi.—Mr. E., æt. 25, first consulted me September 13, 1847. Has been accustomed to rather free living. Eighteen months ago had syphilis, and was under mercurial treatment for three months. Last April had an eruption on the skin, for which he was under the care of Dr. Chambers, who prescribed for him iodide of potassium and sarza. There was at that time a slight cough, and when the eruption was cured, the cough increased, and has continued ever since, with greenish or yellowish opaque expectoration. In the last two months he has become much thinner, and has frequently had profuse night-sweats, and he says that his breath and strength are failing him almost daily. In the last few days he has been suffering from a bad attack of piles.

On examination, I found defective motion, and almost perfect dulness in the left front, from the scapula to below the mammilla. About an inch above the latter point, was large loose gurgling; above and below, short moist crepitus without breath-sound. In the inferior regions of

this side, the breath-sound was feeble, with slight sub-crepitation in parts. In both inter-scapular spaces there were loud tubular sounds of the breath and voice.

The oil was prescribed in increasing doses; a liniment, consisting of acetic acid, acetum cantharidis, and iodide of potassium; an electuary of confection of senna, with sulphate of potass, sulphur, and syrup of poppies. Sept. 23. Takes a table-spoonful of oil thrice daily, and has already improved in strength and general feelings. The sweats have ceased, and the expectoration and cough are considerably diminished. The piles are well. The gurgling was less liquid, and pectoriloquy and cavernous breath-sound were now heard; but there was no material change in the dulness. He was directed to pass the winter at Torquay, or the Undercliff, and to persevere with the treatment.

May 26, 1848. Had most rigidly adhered to all directions, living most carefully, and never omitting the oil or the liniment. Passed the winter at Torquay almost without any disturbance of his progressive improvement. He now is stout and hale-looking; has been in the habit of walking or riding almost all day; only feels his breath a little short, and there is still slight cough with a little yellow expectoration, chiefly confined to the morning. In the last two or three days the sputum has been a little tinged with blood (this was the reason of his calling on me), and the bowels have been rather confined.

I still found dulness, and dry cavernous sounds, in the left chest; but they were now confined to the space of about an inch above and below the clavicle; the breath and stroke-sounds below and behind being clear and vesicular, without any crepitus. The tubular sounds in the inter-scapular regions were also much diminished. He was directed to take an acid aperient every morning, and to leave off malt liquors.

Oct. 18. Has been almost perfectly well during the summer, the cough and expectoration being but trifling, and, as he says, his breath and strength are as good as ever. For the last two months, he has left off the oil. The dulness at the left apex is much diminished, and there are no cavernous sounds; only a tubular whiffing and muffled broncho-phony between the clavicle and the scapula, mixed with vesicular breath-sound at every part. The tubular expiration at the root of each lung is now scarcely more than it often is in health.

There seems little reason to doubt that this patient will entirely recover; but as a precautionary measure, I have advised him to pass another winter at Torquay.

The foregoing cases are selected, because they are of some standing; and because my brief notes of them are sufficiently explicit to convey some representation of the amount and duration of good wrought by the treatment. The whole number of cases in the third stage of phthisis, (that is, with one or more cavities, as indicated by physical signs) which have been manifestly improved under treatment with the Cod-liver oil, amounts to sixty-two, up to the end of August. In thirty-four of these, I know that the improvement has continued up to a recent period, when I saw the patients, or had reports. Eleven cases, which exhibited decided improvement for a time, have since again declined or termi-

nated in death. Of the remaining seventeen I have had no recent report, and I do not know whether the amelioration has been permanent or not.

The results above stated give to Cod-liver oil, even as a tardative or palliative in phthisis, a rank far above any agent hitherto recommended, whether medicinal or regiminal. I have made extensive trials of several other medicines of reputed utility in this disease, and on a future occasion may lay before the profession the results of my experience, which prove some of these agents to be by no means inoperative or useless; and I still consider them to be often salutary aids in the treatment of this formidable malady, but their utility and harmlessness fall so far short of those of the Cod-liver oil, that I regard them now chiefly as subsidiary means, and the more likely to be useful, in proportion as they facilitate the exhibition or continuance of this superior agent.

If the experience of the profession at large should accord with my own, and with that of those who have preceded me in recommending the Cod-liver oil, our prognosis with regard to phthisis must undergo some modification. To what extent this modification may reach, cannot be determined, until such cases as those which I have recorded have been tested by years of time; but even now, when we repeatedly find forms and degrees of disease, that former experience had taught us to be utterly hopeless and speedily fatal, retarded, arrested, nay sometimes even removed and almost obliterated by various processes of restored health, we must pause ere we, in future, pass the terrible sentence of "no hope" on the consumptive invalid.

II. MODE OF OPERATION OF COD-LIVER OIL.

It seems scarcely necessary to discuss the question, whether the oil owes its efficacy to the iodine which it contains. The amount of this element is so minute as hardly to admit of quantitative measurement; and to ascribe virtue to such infinitesimal fractions, when ordinary doses have no corresponding activity, is to adopt the fanciful and mischievous speculations of the homœopathist, which cannot be too strongly deprecated by the scientific and conscientious practitioner. Several of the patients whose cases are cited above, and many more of whom I have records, had taken iodine in various combinations before taking the oil, but without any effects approaching to those which ensued on the change of treatment. I am by no means incredulous of the salutary operation of iodine in some forms of tuberculous and scrofulous disease; indeed until I used the pure oil, I considered it to be the most useful remedy; but in the last two years, the oil has so far surpassed it and every other medicine in beneficial operation, that I am convinced that it acts by a virtue peculiar to itself.

A perusal of the foregoing cases, and of others on record, at once suggests that the cod-liver oil is a highly nutrient material; and it is commonly admitted by all practitioners who have used it, that it possesses, in a pre-eminent degree, the property of fattening those who take it for any length of time. But its nourishing influence extends beyond the mere deposition of fat in the adipose tissue. The muscular strength and activity are sensibly and sometimes rapidly increased under its

use; whilst the improved colour of the cheeks and lips implies a filling of the vessels with more and better blood. Researches are wanted, to elucidate this subject more clearly; but the analysis of the blood in one case of phthisis which had been under treatment by the oil, shewed a most remarkable increase of the animal principles of the blood, especially the albumen, which amounted to thirteen per cent., being nearly double its usual amount, whilst the fat was not materially augmented; and the fibrin, which is generally high in phthisis, was reduced below the normal proportion.[1] If these results should be confirmed by further observation, there will be no difficulty in understanding that the Cod-liver oil should prove a nutrient to all the textures; although it may yet be a question, whether it does so by direct conversion into albumen or fibrin, or by preventing the waste of the albuminous principle by protecting it from the action of the oxygen absorbed in respiration.

But there is much reason to believe that the oil itself proves serviceable in supplying the fat molecules which appear to be essential to healthy nutrition, as forming the nucleoli of the primary cells or rudiments of tissues. The important part which fat thus performs in the process of nutrition, was first pointed out by Ascherson of Berlin; and that fat forms the central molecules of the elementary granules and cytoblasts of textures, is generally admitted, although few agree with Ascherson in his opinion that the fat forms the cells by its power of coagulating albumen around it. It seems to have been the opinion of Dr. Ascherson and of Dr. Hughes Bennett, who cites it,[2] that in scrofulous diseases there is a want of this fat, and that the albumen derived from the food in digestion is liable to be precipitated in an unorganizable condition (as tubercle, etc.) for the lack of it. But it is now well ascertained that scrofulous and tuberculous deposits, so far from being deficient in fatty particles, contain them in greater quantity than exists in the blood, or in its plasma in a healthy state. The explanation which I have given[3] of the chief salutary action of the Cod-liver oil, is not that it supplies fat where it is wanting, but that it supplies fat of a better kind, more fluid, more divisible, less prone to change, and more capable of being absorbed into, and of pervading, the structures of the body: thus affording a fine "molecular base" in the chyle, and therein, a material for a better plasma; and being conveyed into the blood distributed through capillaries and around deposits (in such quantity as to soften and dissolve the crystalline and irregularly concreted fat scattered through them), it renders them more amenable to the pro-

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[1] Simon's Animal Chemistry, translated by Dr. Day, vol. i, p. 280. London: 1845.

[2] Bennett on the Oleum Jecoris Aselli, p. 58: Edinburgh, 1841. In a recent number of the "Edinburgh Monthly Journal of Medical Science," the editor, Dr. Hughes Bennett (or some one writing under his direction), accuses me of plagiarism, in adopting his explanation of the action of the Cod liver oil without acknowledgment. But this explanation, which is not his, but quoted from Ascherson and other German writers (and is combined by him with the notion of the oil acting by its iodine), is by no means that which I propose, as may be seen on reference to the text The professed review which contains this accusation, betrays such gross misunderstandings of the work which it criticises, and such a spirit of personal jealousy, that I do not think it needful to notice it further.

[3] Principles of Medicine, 2nd ed. p. 403: London, 1848.

cesses of reparation and absorption. Hence its beneficial operation is more marked in those stages of tuberculous disease in which the deposits abound in fat: that is, at the period of maturation and softening; although from the extent of mischief already done, both to the part and to the system, the benefit may not be so lasting as in the early stages of the disease.

One of the most remarkable effects of the Cod-liver oil, in some cases of the second and third stage of phthisis, and in other forms of scrofulous disease with extensive suppuration, is the speedy removal of the sweats and other symptoms of hectic fever. This can hardly be ascribed to its direct nutrient powers; but I think that it is due to its influence in diminishing the unhealthy suppuration which is excited around the softening and excavated tubercles. If my views of the chemical nature of suppuration,—that it consists of a further oxydation of the exudation corpuscle,[1]—be correct, then it is quite intelligible that the presence of so highly combustible a material as oil must check this process of oxydation, and thus prevent the degeneration of the corpuscles into the aplastic state of pus globules. In fact, if it should prove to be correct, according to the analysis above quoted from Simon, that Cod-liver oil removes the excess of fibrine in the blood of phthisical patients,—this also equally accords with my notion, founded on the inferences of Mulder and others, that the formation of fibrine is due to a process of oxydation of the albumen (forming a deutoxide of protein, according to Mulder); and that, by preventing this, the oil removes that tendency to cacoplastic inflammatory deposits which largely contribute to increase the consolidation of the lungs and other organs in phthisical subjects.

In making these surmises, I would not be supposed to adopt the idea of Liebig, that pulmonary consumption is the result of an excess of oxygen in the blood at large, consuming its materials, and those of the textures. Many of the symptoms, as well as the organic lesions of the disease, shew that there is a great deficiency in the process of respiration by which oxygen is supplied to the blood; and some of the most rapidly fatal cases, exhibiting speedy emaciation, are, throughout their course, in a condition bordering on asphyxia. Here is obviously a great want of oxygen in the blood,—nay, I believe the excess of fat in the liver, and in the tuberculous deposits, in these instances, to be caused by this very scanty supply of oxygen to the system. But although it is deficient in the system, enough oxygen comes into contact with the exudations from cavities in the lungs, and from the diseased bronchi in their vicinity, to effect the formation of much unhealthy pus; and it is the formation and reabsorption of this that seems to excite the hectic of phthisis, as well as to keep up much harassing local irritation. Now, I believe it to be by diminishing these exudations, and checking their further oxydation into pus, that Cod-liver oil acts so promptly in reducing the hectic sweats and purulent expectoration of phthisis, which accelerate and aggravate its destructive progress.

The limits of this paper will allow me to notice but briefly one more

[1] Principles of Medicine, 2nd ed. p. 295.

point in regard to the action of Cod-liver oil. Unlike other oils or fats, it rarely disorders the stomach or bowels, or disturbs the functions of the liver. If taken in any quantity, vegetable oils commonly purge, and animal oils turn rancid in the stomach, causing heartburn, bilious attacks, and even jaundice. On the contrary, Cod-liver oil generally improves all the chylopoietic functions, and distinctly promotes the action of the liver; so that, as in several of the cases above related, the appetite and power of digestion are restored, and patients are enabled to take an amount and variety of food beyond what they were accustomed to, even in health. I cannot help thinking, that this peptic influence of the oil is due to its containing some biliary principle, which both favours its divisibility in the process of digestion, and promotes the natural secretions of the liver. The flow of bile, as indicated by the colour of the fæces, is generally free and uniform during its exhibition; and I must not omit to notice another fact, which I believe to be connected with increased activity of the liver. I have in numerous instances remarked that the bulk of the liver (as determined by percussion) becomes augmented during its use; yet without tenderness or any other sign of disorder. In fact, this seems to be a kind of useful hypertrophy, induced by the oil augmenting the bulk and quantity of the hepatic cells, and supplying at once a material the more fitted for this secretion, because it has already within it some elements of biliary matter which served a similar purpose in the liver of the fish, and this at a lower temperature, and less favourable to the activity of the process. The observation of this influence of Cod-liver oil has led me to use it in several cases of functional and structural disease of the liver, marked by defective or depraved secretion, and in some instances with most satisfactory results, especially in one of habitual formation of gall-stones, which had resisted all kinds of treatment, and was rapidly destroying the health: the use of the oil has entirely stopped the attacks, and has restored the patient to good health.

It appears probable, therefore, that although other oils might be equally influential in promoting nutrition, and in preventing and removing the cacoplastic and aplastic exudations of scrofulous subjects, the oil from the cod's liver, and perhaps those from the livers of other fish, have the advantage in point of digestibility, and in promoting the action of the digestive and biliary organs.

III. PREPARATION AND ADMINISTRATION OF THE COD-LIVER OIL.

It may seem somewhat strange that this remedy, which has been long employed and valued on the continent, and in some limited localities in this country, and of late years has been strongly urged on the attention of practitioners, both at home and abroad, should have been so slow in being received into general use. If the experience of other practitioners accords with my own on this point, I would give as the reason of this tardy introduction, the disgusting smell and taste of the oil as it has been commonly prepared, and an impression generally prevalent that the efficacy of the remedy is connected with these offensive properties. This notion was favoured by Dr. Hughes Bennett, in his monograph published in 1841. At that time I made several trials

of the oils, selecting the clearer specimens of the brown oil, as recommended; but I found that so few patients could take it at all, and fewer still were able to persevere with it, that the inference seemed to be, that however German and Dutch stomachs might bear it, English ones could not, at least among the upper classes. It was not until I had witnessed some striking examples of benefit ensuing from the use of the pure oil, prepared according to Mr. Donovan's method, that I began again to make trial of it, and to reflect further on its mode of operation when freed from all impurities; and the results are recorded in the preceding pages. They will not, I think, be considered less favourable than any that have been previously published; and their value will be much increased by the statement that in all instances I have prescribed oil as *free from taste and smell as could be procured;* and so little difficulty has been experienced in its administration, that the proportion of cases in which it has decidedly disagreed has not amounted to four per cent.

The inoffensiveness of the oil implies the use of no process by which it can be deprived of its proper qualities. All that is required is, to obtain it *pure and fresh,* as it existed in the hepatic cells of the healthy fish when alive, without contamination by any process of putrefaction, roasting, boiling, or the like. On the contrary, the disgusting smell and taste, and dark colour of the impure oil, proceed from the putrefaction and heat to which the livers are subjected, for the purpose of obtaining from them the utmost quantity of oil; hence it becomes highly rancid, and holds in solution or suspension various putrid and colouring matters derived from the corrupting cells and tissues of the liver.

It is not my intention to describe the details of the process by which the oil may be obtained in the greatest purity; but I may mention the following particulars, to which it is necessary to attend, in order to obtain a good product. The livers should be used as soon as possible after the death of the fish, every hour deteriorating the quality of the oil. The pale, plump livers should be preferred; those which are flabby and dark in colour should be rejected as unhealthy. The livers, after being quickly pounded into a pulp, should be mixed with water of the temperature of about 120°, then filtered; and, after standing long enough, the oil is to be decanted from the filtered liquor, cooled to the temperature of 50°, and again filtered. The whole process is to be accomplished with as little delay as possible, and in closed vessels, to prevent the air from giving to the oil the slightest degree of rancidity. For the same reason the vessels, in which the oil is preserved, should be full, well corked, and kept in a cool place. I recommend the second filtration after cooling, to remove the more solid part of the oil, the stearin and margarin, which not only further clears the oil by its separation, but, by leaving a preponderance of elain, gives to it more of that perfectly liquid and penetrative quality which promotes its absorption and diffusion through the fluids and tissues of the body.[1] My usual

[1] The oil most commonly used by my patients has been carefully prepared by some of the most eminent operative chemists in London, particularly Messrs Bell and Co. of Oxford-

mode of administering cod-liver oil, is in doses of a tea-spoonful, gradually increased (if the stomach bear it) to a table-spoonful, floating on some pleasant-flavoured liquid, such as diluted orange wine, or the Infus. Aurantii Comp., with a little Tinct. and Syr. Aurantii. The vehicle should be suited to the taste and stomach of the patient; and much of our success in exhibiting the medicine will depend on our being able to keep the palate and stomach at peace with the oil. In numerous instances I have found that the addition of a little diluted nitric acid to the vehicle will make it more grateful to the palate, as well as serviceable to the stomach; and we may often combine with it other medicines which are not disagreeable, and thus fulfil the indications of palliating symptoms by their means. The fittest time for taking the oil, is from one to two hours after the three first meals of the day. At this time the chyme is beginning to pass from the stomach into the duodenum; and it would appear that the oil passes quickly with it, for given at this time it causes none of those unpleasant eructations which are apt to occur when it is taken either before or with food. There is nothing in the oil for the stomach to digest; and the less it is brought into contact with it, and the sooner it passes out of it, the better. When it mixes with bile and pancreatic juice in the duodenum, its division and absorption begin and proceed, as in the case of all fatty matters. Herein, too, we see a reason why the oil does not agree so well either with the palate or stomach, when mixed in an emulsion, or combined with liquor potassæ, as recommended by some practitioners.

In conclusion, I repeat, that further observations, and longer time, are requisite to determine with accuracy the extent to which this agent can control or remove tuberculous disease of the lung; but I would state it as the result of extensive experience, confirmed by a rational consideration of its mode of action, that the *pure fresh Oil from the Liver of the Cod, is more beneficial in the treatment of Pulmonary Consumption than any agent, medicinal, dietetic, or regiminal, that has yet been employed.*

7, Holles Street, Cavendish Square, 18th Nov. 1848.

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street, Mr. Squire of Oxford-street, and Messrs. Allen and Co. of Plough court, Lombard-street. The oil supplied by these chemists, when fresh, has a sweetish, grassy smell and bland taste, and only acquires a fishy odour and flavour on exposure to the air or heat. Good specimens have also been sent to me from Messrs. Taylor, of Vere-street, and Mr. Twinberrow, of Edward-street. But the sweetest oil that I have yet met with, is that prepared on a large scale on the northern coast, by Messrs. Hogarth and Co., wholesale fishmongers, and is now supplied by Mr. Barclay, of Fore-street, and other wholesale and retail druggists. This oil has a pleasant odour of fresh sea-weed, and is more free from stearin than other specimens. It has further the great recommendation of being considerably cheaper than that prepared in town; and if on trial it should be found to be as efficacious as that has been proved to be, its moderate price will ensure a preference for an article that is consumed for months, and even years, at the rate of three tablespoonfuls in the day, and ought, if possible, to be supplied on the terms rather of an article of diet, than of an expensive drug. I understand that much of what is sold in the market as cod liver oil, is obtained from the livers of the skate, the hake, and other coarse fish. Such adulterations are of course to be deprecated; but it is a subject deserving of investigation, whether, as seems probable, a pure oil of analogous therapeutic properties, may not be obtained from such sources at a price which would place it within the reach of the lower classes, who suffer so extensively and variously from diseases of malnutrition.

OBSERVATIONS ON CLEFT PALATE; WITH CASES ILLUSTRATING THE NEW OPERATION OF STAPHYLORAPHY.

By WILLIAM FERGUSSON, Esq., F.R.S., Professor of Surgery in King's College, London, and Surgeon to King's College Hospital.

Four years have now elapsed since I had the honour of reading some observations on Cleft Palate, and the operations for the relief of this malformation, before the Royal Medical and Chirurgical Society; and three years have passed away since that communication was made public in the *Transactions* of the Society.[1] During this interval my attention has been very frequently called to the same subjects; and as the views which I then advanced were in most respects of a novel character, I feel in some degree bound to state the results of further experience regarding them. In the second edition of my work on *Practical Surgery*,[2] I gave further proof of the accuracy of my views, and at a later date again referred to the subject, in one of the lectures at King's College, which was subsequently published in the *Medical Times*,[3] under my own superintendence. The views regarding this malformation, and the particular operation resorted to for its relief, are as yet, I believe, so little known to the profession, that I trust I may not be deemed presumptuous in again endeavouring to draw the attention of my brethren to subjects which, I am disposed to think, have had less consideration than they really deserve. In France, in Germany, and in America, many distinguished surgeons have written upon staphyloraphy, and numerous examples have been given of the success of the operation; but, strange to say, the proceeding has attracted little more than casual notice from the surgeons of Britain. Since Alcock first performed the operation in this country in 1821, it has been frequently repeated, but at dates so few and far between, that success, when achieved, has produced but little impression either upon the profession or the public. With few exceptions (among which I may refer to the brilliant examples occurring to Sir Philip Crampton[4]), the results of surgical interference have been so unsatisfactory, that teachers have done little more than describe the process which was followed by Roux, to whom the honour is due of having devised and first performed the operation. My own personal experience in early life in such cases had led me to conclude that an operation could only be successful in the most favourable instances, and it was not until I had made a careful anatomical examination of the parts, that I became convinced that more might be done by the surgeon than had yet been accomplished. At least it appeared to me that the operation might be put upon a more scientific basis, and that surgeons might be made aware of the nature and effects of the hap-hazard collateral incisions which had been pro-

[1] Vol. xxvii. [2] P. 530. [3] Vol. xvi. 1847.
[4] Dublin Journal of Medical Science, July 1, 1843, vol. xxii.

posed for the purpose of relaxing the soft palate during the period required for union in the mesial line. Roux's experience in the operation had been great, and his success was deemed very satisfactory,—two-thirds of the simple cases, and one-third of those which were complicated, having derived benefit from the proceeding. My friends Dr. Mütter, of Philadelphia, and Dr. J. M. Warren, of Boston, had achieved much greater proportional success: for out of twenty-one operations, Dr. Mütter had succeeded in nineteen; and Dr. Warren had been equally successful in thirteen instances out of fourteen. Results like these might well content the most sanguine. It was not, then, with the hope of shewing greater numerical results that I was first induced to write upon this subject, but because I had acquired a knowledge of the anatomy and physiology of the parts of which I believed surgeons to have been previously in ignorance, and upon which I had founded views and proceedings more in accordance with scientific surgery than those hitherto acted on, and which, if proved to be correct, might enable the surgeon to calculate on the result of the operation with a certainty heretofore unknown. I venture with great diffidence to use such language with reference to a subject, in connexion with which the names of the most eminent surgeons of the day may be found; but it is beyond dispute, I presume, that the anatomy of cleft palate had never been described until I had the honour of doing so, nor had there been any accurate allusion made to the actions of the parts in the various modifications of the operations originally performed by Roux, which had been suggested by that gentleman himself, by Dieffenbach, Liston, Mettauer, Warren, and others. I must refer to my original paper already alluded to, for various particulars which need not be repeated here. It will be sufficient for my present purposes if I touch upon the leading features of that communication.

The extreme mobility of the two portions of the soft velum in cleft palate had attracted the notice of all observers, but little, if any, attention had been directed to the moving powers. It was the custom in examining a case of the kind, for the purpose of determining upon an operation, to be guided by the facility with which the two portions of the uvula come together during deglutition. If a person with cleft palate be desired to swallow a little water, slowly and with the mouth partially open, the back parts of the fissure may be seen to approach each other, and in most instances actually come into contact. If they seem to do so readily, the prospects in this respect are favourable for an operation, and *vice versâ*. The cause of this movement had never, I believe, been inquired into. So accurate an observer as Malgaigne[1] had been content to state, that it was "a muscular action of which it is difficult to give an explanation." The movement is clearly attributable to the superior constrictor of the pharynx and the upper portion of the middle constrictor. The semicircle, which these muscles form on the back and sides of the pharynx, is, during deglutition, drawn into a straight line almost, the fibres come forward, inwards, and some of them downwards, so that the soft structures

[1] Médecine Opératoire, Paris, 1834, p. 486.

immediately in front—being the two portions of the split palate—are pushed in similar directions, and thus the posterior part of the fissure is made to close. The anatomist is more familiar with the action of pulling than that of pushing, as the result of muscular contractions. The lateral movements of the soft margins of the fissure could not escape observation, but, in so far as I know, they had never been accounted for. Doubtless any anatomist would have guessed that the levatores palati caused the elevation of these parts. He could not, however, have supposed that the palato-pharyngei could enlarge the fissure; on the contrary, in accordance with the doctrines of Dzondi and Müller (which are those usually entertained), he might suppose that these last-named muscles would in reality close the fissure, for their action, in the normal state of the parts, is to bring together the posterior pillars of the fauces. An examination of the course of the fibres of these muscles in the cleft state of the palate will shew beyond a doubt, that one of their actions will be to pull the edges asunder: in this state of the parts the anterior, or upper extremity of each muscle, is attached to the posterior margin of the osseous palate, and the fibres in their progress downwards, towards the sides of the pharynx, form a convexity upon the margins of the soft flap (in fact, it is this convex part which constitutes the most bulky portion of the flap): thus the action of each muscle tends towards the straight line, the parts are drawn asunder at such a time, and consequently the gap is enlarged. In the ordinary condition of the palate, these muscles have their fixed points above in the mesial line of the soft palate, and acting towards that line, they must necessarily close or cause the posterior pillars to approximate, in accordance with their supposed functions. Perhaps during deglutition in the cleft state, the upper margin of the superior constrictors forms, for the instant, a kind of fixed point, which permits the lower portions of the palato-pharyngei to act in the normal manner; but during the quiescent state of the constrictor muscles the palato-pharyngei, when exerted to action, must tend to enlarge the fissure in the mesial line. The tensor (or circumflexus) palati seemed to me to possess so little muscularity, and besides to have such a limited sphere of action, that I deemed its influence upon the movements of the palate as of little consequence, and I entertained similar views with regard to both the palato-glossus and azygos uvulæ.

In accordance with these anatomical and physiological data, I inferred that if the chief muscular action affecting the soft palate could be done away with,—either for a short time or permanently,—there would be a greater probability than ever of union taking place in the mesial line when the parts were united by the process of staphyloraphy, and on this principle the proceedings which I recommended were founded. As a preliminary step to the ordinary operation, I suggested the division of the levator palati on each side, and also, if it seemed needful, of the posterior pillars of the fauces, whereby large portions of the palato-pharyngei might be cut across. I also then thought that the anterior pillars, each containing the palato-glossus, might possibly require division. To effect these different incisions, I used a small peculiarly

curved blade[1] for the levator muscle, and common curved scissors for the others.

These doctrines have been acted on ever since the subject was made public, and I am more than ever satisfied of their correctness. Experience has taught me the propriety of certain modifications, and given me such further insight into the whole subject, as to induce me to continue the publication of the "observations" which I have had the opportunity of making during the last three or four years. By far the greater number of cases of cleft palate which I have recently seen, have been unfit for operation. Many have been infants and young children, on whom I believe it is impossible to effect any such proceeding, and in many of the adults the gap has been so wide, or the soft parts have been so narrow, that an operation has not been considered advisable. There is no operation in surgery which so thoroughly requires the consent and assistance of the patient himself, and as neither of these essential points can be expected in early life, all manual interference must of necessity be delayed until the patient's good sense and courage shall be such as to bear him through the various steps of the operation, which, even in its simplest form, requires a large share of heroic indifference on the part of the sufferer. I have operated on one occasion on a boy only eleven years old, who behaved admirably; but, in general, up to the period of puberty, there is a reluctance to submit quietly to any surgical interference.

In a large proportion of cases of cleft palate, the fissure implicates a portion of the bones as well as the soft velum. Such cases are never so favourable for an operation as when the soft parts alone are involved. When the bones are defective, the soft margins are usually narrow, the gap being wide in proportion, and invariably the muscular movements of the flaps are more conspicuous than when the fissure is limited to the soft velum. In the natural state of the palate the muscular movements are not so remarkable as in the abnormal condition. I do not think that either the levators or palato-pharyngei act with such energy as in the cleft state, and the greater the cleft, I am disposed to say, the greater is the muscular action. This does not depend upon increase of muscular fibres, but rather arises from the comparative mobility of the parts. The smaller the fissure, then, the less conspicuous are the muscular actions—the nearer the normal state, the greater the resemblance in action to the ordinary muscular movements.

When I first drew attention to the anatomy of the cleft palate, and pointed out the motor powers likely to prevent the success of the ordinary operation of staphyloraphy, I was chiefly anxious to point out how and where the muscles of the palate might be divided for the purpose of ensuring that state of quiescence which appeared so necessary to secure union in the mesial line. I wished to put the operation on that scientific basis which characterises the modern operations for club foot, bent knee, strabismus, &c. Although fully satisfied of the correctness of my views, I have occasionally had difficulty in explaining why there

[1] Practical Surgery, 2nd ed. p. 531.

should be movement in the flaps after the incisions requisite for the division of the muscles in question had been made. At first I was puzzled on this point, but I believe that I now understand the cause. It generally happens, even after the supposed division of the levator muscles, that considerable jerking in the flaps may be observed, and such movements I have no doubt are produced by the palato-pharyngei. Supposing the two pillars of the pharynx divided, the portions of these muscles in front may yet vary in length according to their contraction or relaxation; and if their anterior extremities still remain in connection with the posterior margin of the hard palate, the action may be sufficiently vigorous to give the impression, as the parts are looked at, that little good has resulted from the preliminary incisions. If, however, the parts be seized with the forceps, and pulled towards the mesial line, the comparatively feeble influence which the muscles now exert will be very striking. Besides averting muscular spasm, the incision which I recommend possesses another advantage, which I did not insist upon so much in my first paper as it seems to deserve. While the parts are stretched across the roof of the mouth after the insertion of the stitches, the wound above is made to gape, and in this condition is covered with a layer of lymph, which has the effect of thickening the tissues for the time, and also keeping them more quiet than they would otherwise be. I have such confidence in the accuracy of this view, that I prefer a free incision in the site of the levator palati rather than a short wound little broader than the blade; and I recommend the free incision, too, because many of the fibres of the palato-pharyngeus muscle will be cut, whereby further relaxation will be permitted. The incision may be effected either with a free division of the mucous membrane, or the knife may be plunged through this membrane, and then carried backwards and forwards to effect the division of the tissues within. I have sometimes acted on this latter plan, but in my opinion it is best to make the opening in the mucous membrane as free (or nearly so) as the wound in the muscular tissues. The blood gets readily away, and there is no infiltration of it in the soft tissues, as happens when the membrane is left almost entire. In general I find that if the preliminary division above the palate be made free, and in an especial manner the anterior extremity of the palato-pharyngeus be separated partially or perhaps completely from the posterior border of the hard palate, there is little need for the division of the posterior pillar of the fauces. There is perhaps little or no risk in dividing this part, but after doing so, I have usually noticed that the two sides of the uvula became more œdematous than on other occasions, probably from defective circulation through the veins. In some instances, however, the division of that part of the palato-pharyngeus which forms the posterior pillar of the fauces greatly facilitates the approximation of the sides of the posterior extremity of the fissure, and in all instances when, notwithstanding any incisions that may have already been made above each flap, the muscular action of the part seems still vigorous, I should deem the division of the parts in question of great service.

It has often appeared to me that when the head was thrown far back for the purpose of exposing the palate to a strong light, the flaps have

been drawn towards the posterior nares, and that in the same instances when the head was not kept so far back, the parts naturally came nearer the tongue. To account for these circumstances, I am disposed to think that when the head is thrown far back, the axis of the muscle is changed, and that its action, instead of being downwards, is probably upwards, just as the sterno-mastoid muscles are understood to incline the head forwards or backwards, according to the angle which the base of the skull forms with the top of the spine. Anywise I have not found it advantageous during the operation to stretch the head very far back.

In cutting so near to the numerous large vessels which are in this vicinity, some danger from hæmorrhage might be apprehended. I have never yet, however, had the least trouble on this score. I have always used iced water in my operations, and the bleeding, which has never amounted to a table-spoonful, has invariably ceased before the termination of the operation. There might be imminent danger if the knife were carried far back above the palate, but so long as it is limited in its action between the posterior nares and the posterior border of the levator palati, there is no possibility of reaching any large vessel. Further back than this there might be a risk of the point passing out at the side of the upper part of the pharynx, and doing serious mischief.

I still retain the opinion that there is no better mode of introducing the stitches than by means of a slightly-curved needle, set in a handle.[1] The point of the instrument, armed with a smooth round waxed silk thread, is passed from below upwards about a quarter of an inch from the cut margin of the fissure, and made to appear in the middle of the gap, when the thread is seized with forceps, drawn three or four inches out of the mouth, and then the needle is withdrawn. A similar manœuvre is followed on the opposite side; the two threads are then tied together by the ends which have thus been drawn out at the mouth, and, by withdrawing one of them, the other will be carried through the aperture opposite to that where it was first introduced. Hitherto the thread has been double; now one end must be drawn through the apertures and out at the mouth, and so the thread is ready to be tied. Two, three, four or five threads are introduced in this way, and then after the cut margins of the flaps are sponged free of blood and mucus, the various threads are fastened.

In my early operations I generally made a simple knot; or, by turning the thread twice over, made that called the "surgeon's," in accordance with the advice of Professor Smith of Maryland. The object of the double turn is to prevent slipping until the completion of the knot. If there be no great muscular spasm, there is seldom any trouble from slipping; if there should be, the twist first made must be held firm with the point of the forceps, or else a favourable opportunity, whilst the parts are very quiet, must be taken to effect the manœuvre. But in preference to such plans I have latterly adopted a method which I have found to be most satisfactory. A loop is made with a single turn of one end of the thread,[2] the other end is then passed through it, when

[1] Practical Surgery, 2nd ed. p. 33.

[2] Druitt's Vade Mecum, 4th ed. p. 401; also Medical Times, vol. xvi.

it is drawn so tight as just to permit the thread within it to slip along on the application of moderate traction. The loop can now be slid up to one of the apertures in the palate, and the cut edges being accurately adjusted, the whole can be kept *in situ* by tying a common knot on the thread close upon the loop. By taking care that the thread is very smooth on the surface, and regular in size, and by drawing the loop with proper firmness, slipping will rarely occur. But, indeed, it is one of the advantages attending my mode of operation, that there is less trouble at this part of the proceeding, than when the muscles are left entire in their natural condition.

The degree of tightness to which the stitches may be drawn, has often been a puzzling point with me. It has been remarked, that ulcerations frequently take place in the site of the ligatures; and this has been attributed to their tightness. I have no doubt that this is the cause; but if the pressure do not actually strangulate the parts, I believe that no permanent harm will result. If the edges of the fissure are not kept together with some degree of firmness, there is a risk of saliva, or mucus, getting between and preventing union. On the other hand, if all the threads were drawn so as to endanger strangulation, the whole extent of the margins between the threads might slough. On the whole, a moderate degree of tightness should be preferred, rather than that the edges should be kept asunder by saliva or mucus. I have, too, had difficulty in determining the time to remove the stitches. In some of my early operations they were all taken away about the forty-eighth or fiftieth hour, but latterly I have permitted them to remain longer. I believe that the adhesions are so readily broken on the second or third day, that it is best to permit all, or at any rate the most important ligatures, to remain over those dates, in case of any dangerous force being applied at this important period. It is better, in my opinion, to let the threads remain several days too long, than that they should be moved a minute too early. Usually I take one or two stitches away on the third or fourth day, and on the fifth or sixth remove them all. It is better, I think, to take them out at intervals, than all at once.

With some exceptions, at first, all my patients have had fluid food from the date of the operation until the union has been firm. I believe this to be a great improvement in the treatment of such cases; and have to express my acknowledgments to my friend Sir Philip Crampton[1] for breaking the established rule, previously acted upon, of starving the unhappy patients for eight-and-forty-hours, or more, after the performance of the operation. Sir Philip permitted two of his patients to partake of "boiled bread and milk, custard, soup, and jelly, twice or thrice a day," with the best possible results; and when I contrast the apparent distress of the patients who were formerly starved, with the comparative comfort of those to whom this wholesome mode of enjoyment has been permitted, I have no hesitation in recommending this treatment as of very great service. Besides, the exhibition of soft or fluid food is less hazardous in my own method than in the ordinary operation, as the chances of spasm and consequent

[1] Dublin Journal of Medical Science, 1st July, 1843, vol. xxii.

dragging in the stitches are greatly arrested. Well made gruel is what I chiefly recommend, and it may be seasoned with salt, sugar, or a little wine, as the patient may choose. Usually, in eight or ten days the union of parts is so firm that solid food may be permitted, and it is seldom that any surgical interference is requisite after that time.

Patients and their friends are generally most anxious regarding the change of voice and improvement in articulation as soon as speech is permitted. If the whole cleft has been closed by the operation, the improvement in tone is at once perceptible; but if there be any aperture left, as is often the case, little change can be perceived. If, however, the opening be closed by any piece of mechanism, the result as regards the voice will appear much the same as in the other instance. In some the change is much more apparent than in others; but in all, considerable after-training is required to improve the voice and speech. The original defect has permitted the air to pass as readily through the nostrils as by the mouth; hence the nasal sound so characteristic of such cases, and hence, too, the impossibility of articulating such sounds and words as get their modulation in the front part of the mouth in the natural state of the palate. I have found some of those on whom I have operated, so very indolent and regardless of improvement, that they have not taken any pains to learn the use of the parts as altered by the operation; but in others there has been such satisfactory progress as to astonish and delight the friends. One of my patients, whose articulation was so bad before the operation that I could scarcely understand a word he said, afterwards set himself industriously to study elocution, and in less than twelvemonths acquired such mastery, that his speech was in reality more correct than is usually heard in ordinary society. The power of speech is acquired so slowly and imperceptibly in early life, that we hardly appreciate the needful efforts; and under the circumstances referred to, we are all perhaps too sanguine as to the expected improvement,—forgetting, in our zeal, the many years that passed in early life ere an ordinary command was obtained over the organs of speech. In most instances I believe that considerable effort is required on the part of the patient to reap the full benefit of a successful operation.

I have attempted on several occasions to close the fissure in the hard palate, in accordance with the directions of my friend Dr. J. M. Warren[1], but as yet without much success. The plan of dissecting the soft tissues from the bones, as recommended by this ingenious surgeon, seems in his hands to have been very successful. My own failures must, I suppose, be attributed to want of skill on my part, or to the circumstance, that the cases in which I have hitherto tried the practice have not been favourable for its application. Sometimes, whilst dealing with the soft palate, I have also dissected the tissues from the bone between the margins of the gap and the alveolar ridges, and so have been enabled to close the whole gap by bringing the parts together in the mesial line; but almost invariably the junction in front has

[1] New England Quarterly Journal of Med. and Surg. April 1843.

given way in a day or two after the stitches have been withdrawn, seemingly in consequence of the contraction induced by the soft structures resuming their original attachment to the bones. Sometimes a small slough has formed in this locality, but I have not perceived that the opening has been larger on this account after the parts had been completely healed; the size of the fissure here being regulated chiefly by the deficiency of the bones.

(To be concluded in next number.)

THE HISTORIES OF TWO CASES OF CEREBRAL APOPLEXY IN CHILDHOOD;

WITH SOME GENERAL AND STATISTICAL OBSERVATIONS ON THE CAUSES OF THE DISEASE, AND THE RELATIVE FREQUENCY OF ITS OCCURRENCE AT DIFFERENT PERIODS OF LIFE.

By RICHARD QUAIN, M D. Assistant Physician to the Hospital for Consumption and Diseases of the Chest; formerly House-Physician to University College Hospital.

The histories of the two following cases of cerebral apoplexy, occurring in childhood, are offered as a contribution to the records of similar cases. Both of these cases presented well-marked and characteristic symptoms, and, at the same time, striking contrasts, not only in the condition of the patients in whom the attacks occurred, but also in the seat of the hæmorrhagic effusion. One of the subjects was an apparently healthy boy, who was suddenly seized whilst at play; in this case the hæmorrhage was found to be in the substance of the brain. The other was an unhealthy girl, who had long been delicate: here the blood was found effused in the arachnoid cavity. In the first case, hypertrophy of the heart existed, and the hæmorrhage was of the sthenic form; in the other, the patient was suffering from purpura, and the hæmorrhage was of the passive or cachectic kind.

This variety of circumstances has led to a series of reflections, which will be found in the following pages. They include some observations on the causes of apoplexy in general, more particularly in reference to the histories of these two cases. Some remarks on the occurrence of apoplexy at this early age, with references to several similar cases, will be given; and a series of statistical facts, which appear sufficient to prove apoplexy to be a disease of middle life rather than that of advanced age, will be appended.

Case I.—*Cerebral Apoplexy in a boy aged nine years, characterized by coma, convulsions, and paralysis. Death in seven hours. Large clot of blood in the right hemisphere of the brain. Hypertrophy of the left ventricle of the heart.*

Thomas Smith, aged nine years, a boy of slight conformation, but who is stated to have enjoyed good health up to the time of the present attack, was brought into University College Hospital in a state of insensibility. On inquiry, I ascertained that, between three and four hours previously, he had been trundling a hoop, when he was seen to stop suddenly, put his hand to his head, and fall to the ground, making

an attempt to grasp the iron railings of a house He was subsequently seen by a surgeon, who recommended his removal to the hospital.

On his admission, there was coldness of the general surface of the body, particularly of the feet; his face was pale; his tongue slightly protruded from the mouth; his breathing slow, occasionally slightly stertorous; his pulse was small, and varied from 50 to 60 in the minute. The right arm and leg were convulsed; the left arm was flexed, but not apparently paralysed, as when removed from any position in which it happened to be, it resumed the same again; the left leg was paralysed, falling flat after being raised up. He was insensible to pinching, or to loud noises made close to his ear. The pupil of the right eye was widely dilated, that of the left much contracted; and both were equally unaffected by a lighted candle. No external marks of injury were found on shaving the head. The treatment consisted of a cold lotion to the head, warmth to the feet and trunk, and a turpentine enema. He died, with very little change in the symptoms, in four hours after his admission, and about seven hours after the first attack.

Post-Mortem Appearances.—The scalp and skull were quite free from any appearance of injury, and the membranes of the brain were healthy; but there was great congestion of the veins and sinuses of the dura mater. The cerebral substance of the left hemisphere was found to be particularly pale throughout. On slicing the right hemisphere, a large clot of blood (about three ounces) and a quantity of serum were found. This coagulum, which extended longitudinally between two and three inches, was placed externally to the right lateral ventricle, and passed downwards to the corpus striatum, but did not communicate with the ventricle. The cerebral substance surrounding the coagulum was not softened. On washing away the clot, the open extremities of several blood-vessels were seen. One in particular, larger than the rest, was traced through the corpus striatum, and was believed to have been the principal source of the hæmorrhage. The lungs were much congested. The heart was enlarged, weighing, when well washed, between five and six ounces. The left ventricle was much hypertrophied, The aortic valves were stiff, like parchment; but, on being tested with water poured on them through the aorta, they were found perfectly competent for their function. The abdominal viscera were healthy, with the exception of venous congestion of the liver, spleen, and kidneys.

Remarks.—In examining the details of this case, we perceive the characteristic symptoms of an apoplectic seizure, in a child, identical with those which occur in the adult. There existed the like sudden attack, arrest of volition and sensation, collapse, convulsions, unequal action of the pupils, slowness of pulse and respiration, stertor, etc. A post-mortem examination, revealing extensive hæmorrhage in the brain, completes the history.

On inquiring into the origin of this sudden and fatal lesion in so young and apparently healthy a subject, and on looking over the list of the generally assigned causes of the disease, hypertrophy of the left ventricle of the heart meets our view. It was present, as we have seen, in this case; and was, in all probability, under the excitement of the play in which the boy was engaged, the immediate cause of the hæmorrhagic effusion. The relation between apoplexy and diseases of the heart

has long been a source of difference of opinion among pathologists; some asserting that the association between the two is intimate; others, with equal force, denying any relation between them, save coincidence. Lancisi, Baglivi, and Portal, seem to have been the first observers who believed hypertrophy of the left ventricle, or other disease of the heart, to be closely associated with apoplexy in the relation of cause and effect. Malpighi, and, at a later period, Cabanis, died of apoplexy, while labouring under hypertrophy of the heart. The deaths of these distinguished men recalled on each occasion attention to the subject; and the close relation of the two affections has since been received by many as established. Amongst the advocates of this opinion we find Legallois, Corvisart, Richerand, Lallemand, Bricheteau, Andral, Cruveilhier, Boilleau, Adams, Hope, and lastly, Burrows, who has with great ability investigated the true conditions of the cerebral circulation, and removed a mass of error by which the subject was oppressed.[1] He has shewn a very close relation between apoplexy and disease of the heart, having ascertained their coexistence in three-fifths of a number of cases, partly his own, and partly from other sources. In fifty-nine cases of apoplexy he found, in reference to the nature of the disease of the heart present, that in nineteen there existed hypertrophy with valvular disease, in ten simple hypertrophy, in eight valvular disease alone, and in one, simple dilatation—being thirty-eight cases of heart disease in fifty-nine cases of apoplexy. This association, as already stated, has been denied by many persons; in this country by Drs. Kellie and Abercrombie: and in France, by M. Rochoux and others. The latter has stated, that in taking two series of cases, the one consisting of persons who have died of apoplexy, the other of those who have died from other and different causes, he finds the proportion of heart disease to be rather less in the one series (apoplexy), than in the other; consequently that the relation between apoplexy and disease of the heart is a mere coincidence. For example, he found that in thirty persons who died from various acute diseases, the heart was hypertrophied in twenty-six. In thirty persons of about the same age, who died from apoplexy, he found the heart enlarged in only twenty-four. Louis, without expressing any opinion on the subject, states that in forty-five cases of hypertrophy, he did not meet with a case of apoplexy. Other observers, admitting the influence of hypertrophy, believe that there are several equally powerful influences which cooperate in the production of apoplexy. Thus Dr. Williams includes as a cause, disease of the heart, when coincident, as it often is, with disease of the kidneys. Dr. Watson believes that the left side of the heart is rarely diseased without the right side participating in the affection; hence arises an obstruction to the venous circulation, and an accumulation of blood in the brain. When the vessels are diseased at the same time, rupture is the consequence. It is right to state that Dr. Burrows takes all these conditions into consideration when assigning the chief place to the influence of hypertrophy of the left ventricle, by the action of which an augmented quantity of blood is sent with increased force into the vessels of the brain. The present case seems strongly to corroborate this opinion.

A careful consideration, however, of all the views which have been

[1] On Disorders of the Cerebral Circulation. London, 1848.

expressed on this subject, leads me to conclude that though the action of the left ventricle in a state of hypertrophy may, in the first degree, and perhaps *per se* in some cases, conduce to the causation of cerebral hæmorrhage, there are many not less efficient causes which contribute to the same result. Among these may be mentioned, on the one hand, plethora, with excess of blood in the system; on the other, impaired nutrition, atony and weakness of the walls of the blood vessels, with perhaps a diseased state of blood, as in Bright's disease and purpura; also atheromatous disease of the vessels, and softening of the brain; venous congestion from disease of the lungs, as emphysema, as well as from dilatation of the right side of the heart; from the pressure of tumours, and from many other causes. Several of these sources of mischief often coexist; and in connection with any of them, the excited or increased action of the left ventricle, though healthy, becomes a powerful cooperating agent. Thus, if venous congestion occurs from any of the causes named, and the left ventricle is actively engaged at the same time in pressing the blood forward through the arteries, the brain is necessarily subjected to an increased pressure; coma is the result, and if death follows, we find all the vessels gorged with blood—*congestive apoplexy.* If one or several of the congested vessels give way, hæmorrhage occurs, and we find *hæmorrhagic apoplexy.* If serum has accumulated as the result of venous congestion, or from any other cause, it will offer an obstruction to the free flow of blood; the brain is again subjected to the pressure of the heart's action, and death may be the result. We here find not an excess of blood, though it has been the agent through which in reality the fatal pressure has been applied, but an excess of serum—*serous apoplexy.*[1] Any of these agencies may operate individually: thus in this child the action of the left ventricle sufficed to cause hæmorrhage from vessels, which were, so far as could be ascertained, perfectly healthy; whilst, on the other hand, atheromatous deposits in the arteries of aged persons are sufficient to permit of rupture of their coats, independently of any morbid action of the heart.

Case II.—*Meningeal Apoplexy in an unhealthy child aged two years and seven months. Insensibility and convulsions. Death in four hours. Large coagulum in the cavity of the arachnoid. Purpura—Anasarca —Disease of the kidneys.*

Mary Ann May, aged two years and seven months, had been a healthy baby until she was four months old. Her parents were healthy, but one of her sisters, when 2½ years old, "had a fit"; on recovering from which, her left arm was paralysed. She gradually recovered the use of this arm, but now, in her sixth year, has frequent epileptic seizures. When the subject of the present case was four months old, her mother was compelled to wean her, and she has since then been a delicate child, and has neither been able to walk or speak. Her food has been poor and deficient. She has suffered much in dentition, and at the

[1] When the serum contained in the arachnoid, the cerebro-spinal fluid, as it is called, exists in its normal proportions, it can pass with facility into the vertebral canal, and thus the contents of the skull can adapt themselves to the capacity of the space which contains them. But when the fluid is in excess, or when it is infiltrated beneath the pia mater, this adaptation cannot take place, and an injurious pressure is the result of any increase in the quantity of blood sent to the head.

time of her death, was cutting one of her eye-teeth. Her mother had for five or six months observed that her feet were swollen, and that in cold weather they became remarkably cold and livid. The child has had a good appetite, and has slept well. Her bowels have been in general relaxed; she frequently cried as if in pain when making water. She has not been known to indicate any pain or suffering in the head. Being unable to walk, she generally lay or sat on the floor, and was so weak, that the gown of her mother brushing past was sufficient to throw her down. Her mother recollects that she had one or two severe falls, but none within the last six months. The marks of bruises which appeared on her body were subsequently attributed by the mother to slight falls, or to the child being pinched or pulled about by some of the other children. She had never taken particular notice of them.

It appears that her appetite had been bad for the two days preceding her death; and that, at about half-past three o'clock on the day of its occurrence, one of her sisters, who was holding her, noticed a jerking or catching of the jaw, that she was about to fall, and that she suddenly went into a fit and became insensible. Her body became rigid, her hands clenched, her jaws fixed, and she foamed at the mouth. This fit lasted a quarter of an hour. She got better for a few minutes, when another fit came on, lasting as long as the first; there was a similar appearance of relief, and a third fit, shorter in duration, succeeded. Some domestic remedies were applied; the child seemed better, and swallowed a little tea, went to sleep, and awoke about half-past seven, when she had another fit and died immediately. An order had been procured for one of the parish surgeons, but not in sufficient time to enable him to see her during life.

Post-Mortem Appearances.—I was not present at the opening of the body, but subsequently examined it and the different organs. The following description of the morbid appearances is founded on this examination, and on notes kindly given me by my friend, Mr. Greenhalgh, who was present at the previous inspection.

The body was emaciated; the feet and legs were œdematous, and numerous small spots of purpura were visible, particularly on the legs. There also appeared to be ten or twelve bruises on the scalp, face, arms, and legs; but they were mere brownish discolourations, arising from slight extravasation of blood under the skin, extending also, in some of the spots, into the subcutaneous cellular tissue. There was no external abrasion, nor any swelling. Each of the clavicles presented a remarkable bend at right angles to its length, on its own plane; and one of these bones had the appearance of having been, at some antecedent period, partially fractured. In the cavity of the arachnoid, particularly over the anterior portion of the right hemisphere, there was a coagulum of blood: there was also effusion of blood beneath the arachnoid, in the pia mater. These effusions, which extended to the left side, and also to the base of the brain, were supposed to amount in all to at least four ounces. The lungs and heart appeared healthy; the latter contained no blood. The liver was enlarged, remarkably pale, soft, and mottled. The kidneys were enlarged, very soft and pale, and evidently diseased. There were some elevated, and apparently ulcerated, patches in the large intestine; the mesenteric glands were enlarged.

Remarks.—The history of this case closely corresponds with that of some others, to be referred to presently. The attack occurred in an ill-nourished, unhealthy child, and was the result of a diseased state of blood (as shewn by the presence of purpura). The vessels, in such cases, participating in the general impairment of nutrition, lose their tonicity, admit readily of congestion and rupture, and give rise, as in the present instance, to the form of apoplectic effusion, known as *asthenic*, *cachectic*, or *passive* hæmorrhage. This case contrasts well with the preceding one, in which the powerfully-contracting left ventricle of the heart gave rise to hæmorrhage in an otherwise healthy subject.

The appearance of bruises on the body of this child gave rise to a medico-legal investigation, which compromised the liberties—and it might have been, the lives—of its mother and aunt. One of the medical gentlemen who examined the body, having been informed by some persons that the relatives had treated the child badly, came to the conclusion, on seeing the bruises and the bent clavicles, that the effusion was the result of direct violence, and that it could not have been produced even by a fall. On this evidence the mother and aunt were sent to prison by the magistrate. On subsequently examining the body, by direction of the coroner, and seeing the anasarca, purpura, and diseased kidneys, I concluded that the bruises (which, though numerous, were slight), did not indicate the application of violence—(in one of Dr. West's cases, subsequently quoted, the knot of a night-cap sufficed to cause a similar appearance); and that the hæmorrhage, though a fall might have contributed to its production, was, in all probability, the effect of natural causes. In this opinion the jury coincided. It was further shewn in evidence, that the child had been kindly treated, and that the persons who reported to the contrary had been at enmity with the family. After a week's detention, and much consequent mental suffering, the relatives were again brought before the magistrate, and discharged. The chief arguments used, independently of the appearances described, in support of the notion of external violence, were: 1st, that apoplexy did not occur at this early age without some special cause, such as a violent blow—(the cases quoted in another part of this communication will shew such an opinion to be quite untenable); and 2nd, that if the hæmorrhage had been the result of purpura, the blood would not have been coagulated. That this, too, is a mistaken opinion, has been shewn by Dr. Williams,[1] and very recently by Dr Parkes.[2] Indeed, the fact has been long familiar to myself and others, that the blood is not prevented from coagulating by the existence of purpura.

THE RELATIVE FREQUENCY OF CEREBRAL APOPLEXY AT DIFFERENT AGES.

Passing from these special points in the history and pathology of these interesting cases, it will be useful to view them connectedly, in reference to the early age at which the fatal lesions occurred, and to consider their relation, in this respect, to similar cases. There are three phases or periods of life marked by such wide distinctions in their

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[1] Principles of Medicine, 2nd edit.

[2] Medical Gazette, Nov. 17, 1848.

attributes and relations, that it will be useful to place our remarks under heads thus respectively indicated. They are:—

I. That of the infant at, or immediately after, birth.

II. That which extends from a few hours after birth to the age of 20, —that of full puberty or adolescence.

III. From the age of 20 to extreme old age or decrepitude.

No difference of opinion can exist, that it is this latter period or division of life, which will include the great majority of the cases of apoplexy which occur; but considerable doubt, and some errors, exist as to the periods of this lengthened interval, during which the predisposition to apoplexy is strongest. Some carefully-observed facts will, I hope, throw light on this subject, and afford an interesting and striking result. I shall first briefly consider the occurrence of apoplexy in early life, illustrating the remarks on the second period by reference to several cases. It is a remarkable fact,—rendered still more so by the observations which will presently be made,—that many writers, with extended means of observation, have not met with, or at least have not recorded, any cases of apoplexy before twenty years of age. We need not go further for an illustration than to the table of cases collected by Dr. Burrows[1] from his case books, and from the writings of others, amounting to 215 cases, and in all of which the individuals were over 20. It is probable (certain, in Dr. Abercrombie's cases, here included) that some few examples of the disease, occurring anterior to the twentieth year, have been omitted; yet sufficient evidence remains to show, at least, that such cases are considered very rare. Rochoux, indeed, goes further than this, and states his doubts as to the occurrence of true apoplexy before the age of puberty.[2] I have referred to the reports of the Registrar-General for information on this point; and find the following results of an examination of the tables of mortality for fifty-two weeks, ending the first week of November 1848.

Ages of persons returned as having died of apoplexy in fifty-two successive weeks of the years 1847-48.

Age	0 to 15.	15 to 60.	60 and upwards	
Number	134	495	572	Total 1201.[3]

This return cannot, of course, be received as perfectly correct, the cause of death being too often returned without sufficient evidence of its accuracy; yet there must still be a large number of cases under the assigned age. The number 135 probably includes many infants who died at birth. These are the cases comprised in our first division, to which I shall now briefly allude.

I. HÆMORRHAGIC EFFUSION, OR APOPLEXY, IN INFANTS AT BIRTH.—In a very large proportion of the children who die during birth, or immediately afterwards, in a state resembling asphyxia, if the head be examined, blood will be found effused in the cavity of the arachnoid, and beneath this membrane. Such cases have been described by several writers on the diseases of children, including Barthez and Rilliet, Dr. West and Dr. Kennedy,—the latter of whom has recorded a number of

[1] Op. cit. p. 130.

[2] Dictionnaire de Médecine.

[3] This number gives the proportion of about one case to 1782 persons actually living in the metropolis.

such cases in the *Dublin Journal*.[1] The locality of the hæmorrhage has given rise to the designation, *meningeal apoplexy;* this form is often accompanied by apoplexy of the cerebral substance in points, *capillary apoplexy*. The peculiar circumstances, however, in which the infant is placed during birth, the compression to which the skull is subjected, the change of shape which it undergoes, the impediment to respiration which frequently occurs, as well as the succeeding events (including change of position, the altered circumstances of the functions, not only of the heart and lungs, but also of the skin, mucous membranes, and other organs and tissues), become predisposing and exciting causes of cephalic congestions and effusions much more frequently at this early period of life than in the second period. These peculiarities place so broad a line of demarcation between this class of cases, and those to which our inquiry more particularly belongs, that it will be unnecessary to make further allusion to them.

II. HÆMORRHAGIC EFFUSION, OR APOPLEXY, OCCURRING FROM THE PERIOD OF BIRTH TO THAT OF PUBERTY.—When we contrast the condition of the brain, and its circulation, in the adult, with that in the child or young subject, we can have little difficulty in arriving at the conclusion, that apoplexy will be less likely to occur in the one case than in the other. A brief reference to the causes of the disease, already mentioned in this paper, will suffice. In early life we find the skull less resisting, and the blood-vessels more elastic and yielding, than in the adult,—where the one becomes dense and rigid, and the others frequently the seat of deposit or degeneration. In the young subject, the energies of the system are directed to nutrition and growth; in the adult, the chief call is on the brain and nervous system, which then has to bear the wear and tear of life. The heart, in the progress of life, becomes larger and more powerful, it is subjected to greater excitement, and becomes oftener the seat of disease,—all interfering with the circulation through the brain. These, and other causes, make a wide difference in the comparative frequency of apoplectic disease in the second and third periods of life. There is, however, another condition on which apoplectic effusion sometimes depends: viz., that in which diseased blood escapes from equally diseased blood-vessels, as already described in the remarks on the second of the two preceding cases. I allude to purpura hæmorrhagica and analogous conditions. Here the function of nutrition, active in childhood, is interfered with; and hence the form of apoplexy resulting is of the asthenic or cachectic character. This form of apoplexy is found to occur more frequently in children than in adults,—a fact set forth in other parts of the present essay. The number of cases of cerebral hæmorrhage and apoplexy, occurring between birth and puberty, which I have collected from different sources, amounts to twenty-three, making in all, with the two preceding cases, twenty five. Of these, however, there were three cases of hæmorrhage without coma, and in another case the symptoms were not very characteristic. This will reduce the number to twenty-one,—quite sufficient to form the basis of future observations. I have thought it desirable rather to give a short outline of each case,

[1] March 1837.

than to mention merely the age, and I have divided the cases into two classes: one, in which the hæmorrhage occupied the substance of the brain itself (fourteen cases); the other, in which blood was effused into the membranes (nine cases). The latter or meningeal form of the disease is generally believed to be the most frequent in children; though, on the present occasion, it will be found in the minority,—a fact which will be partially explained by my having placed, in the first class, three cases of which the *post mortem* appearances are not given: viz., a case by Dr. Kennedy, one by Andral, and another by Serres, and which might have belonged to the meningeal form.

A. CASES OF CEREBRAL APOPLEXY—HÆMORRHAGE IN THE SUBSTANCE OF THE BRAIN.

1. An infant, three days old, apparently quite healthy, presented the ordinary symptoms of well marked apoplexy, and died suddenly. After death a clot of blood was found in the substance of the left hemisphere of the brain, immediately outside the corpus striatum. The tissue was "a little softened around it."[1]

2. An infant, five days old, presented characteristic symptoms of apoplexy, and died suddenly. A *post-mortem* examination was not permitted.[2]

3. A little girl, eleven months old, had suffered from head symptoms for a considerable time. She had an attack of extreme faintness forty-eight hours before death. After death several apoplectic clots were found in the brain, with much venous congestion. There was thickening and obliteration of several of the veins, the result of previous inflammation.[3]

4. A girl, two years old, had measles, and subsequently suffered from general illness. She was seized with convulsions, and the right leg became paralysed; the left pupil was contracted. Death occurred in a few hours after she came under observation. After death, a quantity of blood was found in the optic thalamus and corpus striatum, but on which side is not stated.[4]

5. A case (subject three years old) recorded by Lallemand[5] is very similar to that of Dr. West, already referred to.

6. M. Serres states that he has seen apoplexy in a child three years old. I have been unable to find the particulars in his essay.[6]

7. A child, five years old, laboured under an apoplectic torpor rather than coma, and died in a state of great prostration. After death there were found "capillary apoplexy and a clot of blood."[7]

8. The same authors record the case of a delicate girl, aged seven, who died after having suffered head symptoms for several days. After death, a clot of blood was found in the left optic thalamus.[8]

9. Mr. Worthington refers to Dr. Abercrombie as recording the case of a child, aged 9, in which both lateral ventricles contained clots of blood; that in the right ventricle being of the size of a large walnut. The

[1] Billard, "Traité des Maladies des Enfans," p. 600.
[2] Kennedy, "Dublin Journal of Medical Science," January 1837.
[3] West, "Lectures on Diseases of Infancy," etc. Lect. 4.
[4] Barthez et Rilliet, "Maladies des Enfans," tom. ii, p. 65.
[5] Récherches Anat. Path. sur l'encephale. Lettre 3ieme. [6] Annuaire des Hôpitaux, p 284.
[7] Barthez et Rilliet, Op. cit. tom. ii, p. 54. [8] Op. cit. p. 56.

symptoms, and the state of the substance of the brain itself, are not given. I have been unable to find the original case.[1]

10. Barthez and Rilliet refer to a case in the *Edinburgh Medical and Surgical Journal*, in which, without any disease of the brain, clots of blood were found in both lateral ventricles, and at the base. The subject was a boy, aged nine. The symptoms preceding death, were, headache, convulsions, constant movements of one side of the body, contraction of the fingers, followed by relief: on the sixteenth day, profound coma, and death in a few hours.[2]

11. A girl, when young, had suffered from necrosis of the jaw, and of the bones of one of her feet. Her health became re-established, and she continued well for some time, until head symptoms came on. She had convulsions of the right side, succeeded by paralysis of the left. From this she was relieved, as also from a subsequent attack of a similar character; but died after an attack of coma, of eighteen hours' duration, in her eleventh year. After death there was found a clot of blood, larger than a hen's egg, external to the right ventricle. The brain was softened. Blood was also found in the subarachnoid space over the surface of the right hemisphere.[3]

12. A boy of the same age, in good health, was found shortly after his breakfast in a state of insensibility and collapse, with stertorous breathing, convulsions, the right pupil dilated, and the left contracted. He died in about twelve hours from the commencement of the fit. After death, a large clot of blood was discovered in the right ventricle and adjoining portion of the brain. In other respects, this organ was healthy. His stomach and intestines contained a large quantity of raw undigested turnips.[4]

13. A case is referred to by Andral, in a child twelve years of age. The history is not narrated. He alludes to Guersent, as having seen similar cases.[5]

14. A boy, fourteen years of age, had been destitute during the winter. In a state of great debility in the spring, he complained of headache, restlessness, general feverishness, and slight delirium. On the following day he was brought to the hospital, in a state of insensibility, and died in an hour afterwards. A clot of blood was found in the posterior portion of the right hemisphere.[6]

It is unnecessary to extend this epitome of cases by referring to those which are recorded as having occurred between the ages of fourteen and twenty, such cases are not very unusual. Several may be found in Mr. Copeman's collection of cases of apoplexy.[7]

B. HÆMORRHAGE IN THE MEMBRANES OF THE BRAIN.

Serres appears to have first distinguished apoplectic effusions in the substance of the brain from those in which the effused fluid is contained in or beneath one of the membranes enveloping this organ.[8]

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[1] Provincial Medical and Surgical Journal. New series. Vol. iii.
[2] Op. cit. p. 56.
[3] West, Op. cit.
[4] Mr. Worthington in "Provincial Journal," new series, vol. iii, p. 180.
[5] Pathological Anatomy, vol. ii, p. 723.
[6] Guibert, "Archives Générales, 1827," and Barthez and Rilliet, Op. cit. p. 52.
[7] A Collection of Cases of Apoplexy, by Edward Copeman, surgeon. London, 1845.
[8] Annuaire des Hôpitaux, 1819.

He attributed much importance to this distinction, believing that the lesion of the cerebral substance was always accompanied by palsy, whilst that confined to the membranes did not produce this result. On this distinction he founded a diagnosis as to the seat of the extravasation. He shewed also that meningeal apoplexy occurs chiefly in children under fifteen years of age, and in men above sixty.[1] He found that it occurred more frequently in women, and at a much earlier age than that just mentioned. In forty-one cases there were thirty-three females and only eight males.[2] It is almost invariably this form of apoplectic effusion which occurs in infants during birth, as already stated, and also in those children who are rendered cachectic by bad nursing, bad air, and bad food. These latter are the cases which are described by Barthez and Rilliet, Dr. West, and others, under the name of *cachectic, or passive hæmorrhage.* The following are examples of the meningeal form of apoplexy in children.

15. A male infant had suffered from drowsiness, sickness, and slight jaundice when a fortnight old. When five weeks old, he was seized with hurried respiration, great depression, and convulsions, during which he screamed aloud. Spots of purpura appeared on various parts of the body, and a dark mark under the chin, where the knot of the night-cap pressed. The fits recurred frequently, and he died in a state of exhaustion sixty hours after the first fit. After death, there was found to be much congestion of the sinuses of the skull, with large coagula over both hemispheres in the cavity of the arachnoid. The body was generally anæmic; the heart was healthy.[3]

16. A girl thirteen months old (in the practice of Drs. Lombard and Panchaud, of Geneva), after recovery from bronchitis, was seized with an attack of convulsions, which ceased, and she slept for a short time. The convulsions reappeared, and the child died suddenly in nineteen hours from the first attack. Hæmorrhage was found to have occurred beneath the arachnoid, in the pia mater, over both hemispheres of the brain. There was slight softening of some portions of the cerebral substance, and a tendency to hæmorrhage in points.

17. A boy, two years old, had convulsions during five weeks antecedent to his death. They became more frequent, he complained of his head, and bled much from the nose. After death, a large clot of blood, which had evidently been some time effused, was found in the cavity of the arachnoid.

18. A boy, two years and a half old, had suffered from some obscure illness for several months. There were many purpuric spots on the body. The immediate cause of death was lobular pneumonia: there were no cerebral symptoms. Clots were found over both hemispheres in the arachnoid cavity.

19. A girl, two years and a half old, had been delicate from the age of six months, in consequence of difficult dentition. On the day preceding her death, she exhibited signs of a convulsive attack, which became more marked, and she died. After death, a clot of blood was found in the cavity of the arachnoid.[4]

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[1] See also a Memoir, with a number of cases which occurred in old men, by Prus, in Mém. de l'Acad. de Médecine, vol. xl.

[2] Op. cit. p. 284.

[3] West, Loc. cit.

[4] These four cases are recorded by Barthez and Rilliet, Op. cit.

20. A child, two years and a half old, of scrofulous constitution, badly nourished, had disorder of the abdominal viscera, and symptoms of abdominal irritation. The child's mother was several times alarmed by its face becoming livid, and by its gasping for breath; a condition which generally lasted one or two minutes. It died in a similar fit. After death, the vessels of the brain were found congested; blood had been poured out in considerable quantity on the surface; the cerebral substance was healthy. The heart was small, the lungs were gorged, the liver and kidneys were enlarged.[1]

21. A boy, three years old, had suffered from the age of two years and five months from passing blood by vomiting and stool. His food was bad; and when three years old, he was puny and delicate. While he was in a state of exhaustion from diarrhœa, coma came on, and he died in twenty-four hours. After death, a large coagulum, amounting to six ounces, was found on the surface of the right hemisphere, and a small clot in the substance.[2]

22. A girl, twelve years of age, having suffered from some obscure illness for several days, was suddenly seized with loss of consciousness, and her left side was paralysed. Her consciousness was restored, and she regained some power in the side; but she became gradually weaker, and died in fifteen weeks from the date of the attack. After death, the remains of an old clot of blood were found over the right hemisphere, the substance of which was also slightly softened.

23. A girl, fourteen years old, had induration of the liver, and scrofulous glands. She died without any cerebral symptoms. After death, a clot of blood was found in the cavity of the arachnoid, over the anterior portion of the right hemisphere of the brain.[3]

It would be interesting to enter at greater length into the histories of the preceding cases, but it is not possible to do so on this occasion. The facts, thus briefly set forth, exhibit a great variety in the symptoms, and shew that in many respects they resemble those of very different cerebral lesions. The observation of this fact led Barthez and Rilliet to remark that they believed cerebral hæmorrhage was often confounded with other diseases, and that this confusion caused its frequency and importance to be overlooked. The reader will observe that there was considerable effusion of blood, without head symptoms, in three cases. Such cases are not strictly apoplectic; yet I have felt that their mention could not be uninstructive.

In reference to the seat and frequency of cerebral hæmorrhage in children, the authors just named say, that in their own practice they have met with seventeen cases of meningeal, and eight of cerebral hæmorrhage. From these sources, and from the cases recorded by others, they have drawn up the annexed table,[4] shewing the age, sex, and seat of hœmorrhage in thirty-eight cases of apoplexy in subjects under fourteen years of age.

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[1] Mr. Greenhow, "London Medical and Physical Journal," vol. xlvii.
[2] Dr. West, Op. cit.
[3] Both the latter cases are from Barthez and Rilliet. Op. cit.
[4] Op cit. p. 64.

MENINGEAL HÆMORRHAGE.

Years.	Cases.	Males.	Females.
1 and 1½	4	1	3
2 and 2½	8	6	2
4	3	0	3
5 to 7	4	4	0
11 to 14	4	1	3
Total,	23	12	11

CEREBRAL AND VENTRICULAR HÆMORRHAGE.

Years.	Cases.	Males.	Females.
2	2	1	1
3	2	2	0
4 and 5	3	0	3
7	2	2	0
9 and 10	3	3	0
12 to 14	3	1	2
Total,	15	9	6

The preceding facts will show that the earlier periods of life are not as exempt from these lesions as has been generally supposed; and they will serve as a nucleus for future observations. Their present number, however, is not sufficient to justify any conclusion as to the precise age, in children, most liable to apoplexy.

C. RELATIVE FREQUENCY OF CEREBRAL APOPLEXY AT DIFFERENT PERIODS OF LIFE SUBSEQUENT TO THE AGE OF PUBERTY.

In this portion of our inquiry I propose to avail myself of the statistics of forty-nine cases of apoplexy which came under my notice during the time (above five years) that I was house-physician at University College Hospital.[1] The age was ascertained as accurately as possible in every case; and in every instance there was either a post-mortem examination, or a fit in which insensibility, followed by paralysis, occurred, which justified the case being considered as one of apoplexy. The record has this peculiarity, that the date of the first fit (if there has been more than one) is that which has been retained. The conclusions thence derived are therefore necessarily as to the *period of life most liable to apoplectic seizures*, and not as to *the age at which death by apoplexy occurs*. I believe this to be a distinction of some importance; for, as it must be always a matter of doubt whether a fit will be fatal or not, our inquiries should tend to illustrate the date of its probable occurrence rather than that of its probable fatality. It is this date (that of the probability of the apoplectic seizure) which is of importance in our prophylactic, as well as in all other, considerations.

Table I shews, that of the forty-nine cases, twenty-seven occurred in males and twenty-two in females. The relative frequency of the disease in the sexes, thus shewn, corresponds with the generally-received opinion, that apoplexy more frequently attacks males than females. As the number of females living is greater than that of males, the difference is in reality somewhat greater in favour of the latter. The entire number of cases of every description received into the wards of the hospital cotemporaneously with those of apoplexy, just referred to, amounted to 3655; of these, 1834 were males, and 1831 females. When we thus take all diseases, and find the proportion of the sexes nearly identical, we may safely conclude that the disproportion shewn in the cases of apoplexy is not due to any accidental or special disturbing causes, but that the liability to the disease is in reality greater in males than in females.

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[1] I have pleasure in acknowledging the assistance of my friend Mr. Wilkes (late physician's assistant at the hospital) in preparing the table of ages.

This table shews also in other respects a marked distinction, still connected with the influence of sex. The age of the oldest male attacked, of these twenty-seven cases, was sixty-two years; that of the youngest, twenty-two. The oldest female was aged seventy-five; the youngest thirty. Hence, so far as the number of facts justifies a conclusion, *the disease occurs earlier in life in men than in women;* and further, *the liability to attacks ceases in the like order.* The uniformity of progression, as shewn in the table, seems to support the probability of the facts being sufficient to justify the conclusion. The mean age was, of males, 34.19 years, of females, 50.9.

The Table numbered II, shews the frequency of attacks during decennial periods of life, from twenty to eighty.[1] From it we learn that the *greatest number of cases of apoplexy occurs in males between the ages of* 40 *and* 50*; in females, between those of* 50 *and* 60, in the proportion of ten to seven. The former fall beneath the pressing influences which at this period of life surround them, whether these influences derive their origin from the incessant demands made on the functions of the vascular and cerebro-spinal systems, or from the irregularities to which the digestive and secerning systems are too often then subjected. In females we observe the frequency of the disease increase after the period when menstruation has for some time ceased. This result is not quite consistent with that which might have been *à priori* anticipated. The feminine attributes, however, become less marked at this period, and many women then evince and put into operation mental and physical powers which had previously been undeveloped. Can such a change have aught to do with the result before us?

This table shews further a reduced scale of the population alive of both sexes, according to the census of 1841, arranged in decennial periods. When we compare the relation between the number of apoplectic cases in each period and the number of persons living, we get the only accurate estimate which can possibly be had, of the relative frequency of the disease. On doing so, we find that relation to be (without reference to sex) as 1 to 66 between the ages of 20 and 30,[2] omitting fractions; 1 to 25 between 30 and 40; 1 to 16 between 40 and 50; *and* 1 *to* 10 *between* 50 *and* 60, *at which point the disease reaches its acme of frequency, and then again diminishes;* being 1 to 18 between 60 and 70; and 1 to 16 between 70 and 80. After 80 no case came under observation. It is a singular fact that in 35 cases Bricheteau did not find one above 60 years of age. The steady uniformity of these numbers in the ascending, and again in the descending scale, seems to confirm the probability of their being an accurate representation of the real state of the question. It will be found, on referring to the Tables III and IV, of cases recorded by other observers, that this uniformity does not there exist. The nearest

[1] It will be seen that I have not included the two cases in young subjects, of which the histories have been given here. I have strictly confined myself to the regular admissions to the medical wards of the hospital, and have avoided the introduction of cases from other sources of observation. I might have added several, but they would interfere with what I believe fairly represents the actual amount of disease in a given district of considerable extent.

[2] It is hoped it will be understood that the relation is shewn to a reduced scale of population, and not to the numbers *actually* living in the metropolis. It has been stated already, that there is about 1 death by apoplexy for every 1800 persons of all ages living. (Note p. 33.)

approach to it is in the cases observed by Dr. Burrows; the others ascend and descend with great irregularity. It is also a remarkable fact, that, with one exception, the proportion in my cases finds, in each period, a nearly similar proportion in the same period of one of the other observers, though each may differ from the rest. For example, I find the proportion of cases to the population at the period between 20 and 30 to be as 1 to 66; Mr. Copeman as 1 to 53; Dr. Burrow's collected cases 1 to 80; his own cases 1 to 135; and M. Rochoux 1 to 285. Again, between 50 and 60, I find it as 1 to 10; Dr. Burrows 1 to 10; Mr. Copeman 1 to 20. Additional confirmation of the correctness of my figures may be derived, as already stated, from comparing the proportions which I have found with those of some one of the other observers; thus, 1st, 1 to 66 between 20 and 30 years of age is between 1 to 53 of Mr. Copeman and 1 to 80 of Dr. Burrows; 2ndly, 1 to 25 between 1 to 22 of Dr. Burrows and 1 to 38 of Mr. Copeman; 3rdly, 1 to 16 is not far removed from 1 to 18 of Dr. Burrows; 4thly, 1 to 10 corresponds with 1 to 10 of Dr. Burrows (fractions being omitted); 5thly, the 1 to 18 between 60 and 70 finds its nearest approach in the 1 to 10 by Mr. Copeman; 6thly, 1 to 16 between 70 and 80 finds a relation in Dr. Burrow's cases of 1 to 21, while that of M. Rochoux is as high as 1 to 3. Thus the facts collected by these observers seem to give strength to the results which are here developed, viz., *that apoplexy is not, as many suppose, chiefly a disease of old age; neither does it uniformly increase in the frequency of its occurrence as life advances, but that the liability to its attacks, considerable between* 30 *and* 40, *is greatest between the ages of* 40 *and* 60—a conclusion which is exactly in the words of Hippocrates, and which is, I believe, as near an approach to accuracy as the proof of it is an interesting fact. The opinion to the contrary (that apoplexy is a disease of advanced old age), is in a great measure due to the records put forward by Rochoux, whose cases were derived from the wards of the Bicêtre—an hospital for aged men. Hence the value of a series of cases collected like those here presented, in which there has been nothing particular or special to cause them to be recorded or remembered, but which, so far as they go, represent the ordinary types of the disease. I believe, then, it may be safely concluded, that the liability to apoplexy, which is greatest between 40 and 50 in the male sex, and between 50 and 60 in the female, diminishes gradually after the last-named age in each sex. The source of error, as in Rochoux's case, by which apoplexy is shewn to be a disease of extreme old age, has been already indicated; but there is another and still greater source of error. Very many sudden deaths are attributed to apoplexy without reference to the state of the heart. Morgagni was accustomed to decapitate persons supposed to have died of apoplexy, for the purpose of removing the parts for demonstration, without any reference to the state of the other organs. I hope to be able to shew, on a future occasion, that many sudden deaths in advanced life are connected with a morbid condition of the heart's tissue. The length to which this communication has already extended, prevents any further allusion to this affection at the present time.

[TABLES.

TABLE I. Showing the number of cases of apoplexy observed, with the maximum, minimum, and mean ages of the individuals, distinguishing the sexes.

Sex.	Totals.	Max. ages.	Min. ages.	Mean ages.
Males	27	62	22	34.2
Females.	22	75	30	50.9

TABLE II. Showing the number of cases observed in each decennial period from twenty to eighty years, distinguishing the sexes; also a reduced scale of the numbers of the population living in each of these periods, and the proportion of the cases to this scale of population.[1]

Age.	Males.	Females.	Total.	Reduced scale of population.	Proportion of cases to this scale of population.
20 to 30	5	1	6	400	1 to 66.4
30 to 40	6	6	12	300	1 to 25
40 to 50	10	3	13	210	1 to 16 2
50 to 60	5	7	12	125	1 to 10.5
60 to 70	1	3	4	75	1 to 18.3
70 to 80	0	2	2	32	1 to 16

TABLE III. Showing the number of cases of apoplexy from the tables of different authors, arranged according to the ages in decennial periods.

	Under 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 upwards	Total
Dr. Burrows[2]	0	2	9	6	8	7	1	1	34
Dr. Burrows[3]	0	12	13	27	23	24	17	2	118
Mr. Copeman[4]	20	30	31	31	25	30	25	5	197
M Rochoux[5]	0	2	10	7	13	24	12	1	69
Dr. R. Quain	0	6	12	13	12	4	2	0	49
Total	20	52	75	84	81	89	57	9	467

TABLE IV. Showing the proportions of the preceding cases to the scale of population living in each decennial period.[6]

	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 upward
Dr. Burrows	1 to 135	1 to 22	1 to 23 2	1 to 10.3	1 to 7.1	1 to 21	1 to 4.1
Dr. Burrows (collected cases)	1 to 80.6	1 to 49.9	1 to 18.2	1 to 13.1	1 to 7.2	1 to 4 8	1 to 8.1
Mr. Copeman	1 to 53.1	1 to 38.3	1 to 27.3	1 to 20.3	1 to 10	1 to 5.3	1 to 5 3
M. Rochoux	1 to 285.1	1 to 42	1 to 42 6	1 to 13.9	1 to 4.9	1 to 3.9	1 to 10
Dr. R. Quain	1 to 66.4	1 to 25	1 to 16.2	1 to 10.5	1 to 18.3	1 to 16	

[1] This and the two following tables are not intended to be fractionally correct.

[2] On Disorders of the Cerebral Circulation. London, 1846.

[3] Collected from Abercrombie, Andral, Bright, and Hope.

[4] A Collection of Cases of Apoplexy, by Edward Copeman, surgeon. London, 1845.

[5] Dictionnaire de Médecine.

[6] The scale is of course proportioned to the whole number of cases referred to by each writer.

23, Harley Street, London, November 1848.

CONTRIBUTIONS TO THE PATHOLOGY AND TREATMENT OF TROPICAL FEVERS.

By JAMES BIRD, A.M., M.D., formerly Surgeon of the European General Hospital at Bombay, and late Physician-General, Bombay Army.

INTRODUCTORY REMARKS.

FEVER forms so important a class of admissions into our Indian hospitals,—presents such variety of symptoms, according to season and locality,—and so frequently proves disastrously fatal to our European regiments soon after arriving in the tropics, that it is of importance to discriminate, among a crowd of symptoms, those essential to the disease, as it is greatly modified by circumstances. A long experience among European troops in different stations of the Bombay presidency, and the medical charge, for nearly five years, of the European General Hospital at Bombay, having enabled me to collect many important facts relative to febrile disease, I am induced to bring these before the profession, in the hope they may be useful in guiding the inexperienced tropical practitioner to a rational and successful practice. In the clinical record of my own practice, (from which the following observations are drawn), much attention was given to a minute detail of symptoms, indicatory of diseased action in the nervous, circulating, and secreting systems; and every opportunity was taken of ascertaining, after death, what morbid changes were visible in the abdominal and thoracic viscera, the brain, its membranes, and the spinal column. I have also availed myself of the experience of others, in tracing the origin and progress of tropical fever among bodies of recently arrived Europeans, who, in addition to the usual exciting causes of disease, viz., exposure to the sun, and the too free use of ardent spirits, are in a state of eubesia, or predisposition, from high health and extreme richness of the blood. On this head I have before me the highly interesting reports, by several medical officers, of fevers which prevailed at Kaira, in Gujerat, among the men of H.M. 4th Dragoons, who, from the 1st June 1822, to the end of December 1826, suffered in an unprecedented manner from severe febrile disease, attended by an almost unheard-of amount of mortality; the regiment having lost during this period 277 men, out of an average strength of 528. The admissions into hospital were 2781 for all kinds of fever. A troop of European horse artillery, of which I was the assistant-surgeon, at the same station, but more favourably located (the barracks being on a dry, elevated ground), remained comparatively healthy, having only lost five men from the beginning of 1821 to the end of 1822, out of an average strength of 138; the fever cases during these two years were 154. The mortality amongst H.M. 4th Dragoons, and also H.M. 17th Hussars, the regiment that preceded them at this station, was such as to oblige the Government to abandon the camp and barracks at Kaira, and remove the 4th Dragoons to Kirkee in the neighbourhood of Poona, where they became comparatively healthy. The improved healthiness of this regiment, and the diminished sick-list of the dragoon regiments which

succeeded them at the same station, are undoubted evidence of the superior salubrity of the elevated site and dry climate of the Dekhan over the low sandy soil, and hot, humid atmosphere of Gujerat, so productive of intermittent and remittent fevers; but whether the exciting cause of such be *malaria* from the soil, or the agency of *galvanic electricity*, as supposed by Sir James Murray, is a matter yet undetermined. Regarding their origin, we can only venture to assert that particular soils and localities produce such atmospheric deteriorations as are capable of giving rise to attacks of intermittent and remittent fever.

The following observations may be arranged under four heads, viz.—I, TROPICAL FEVER IN GENERAL; II, INTERMITTENT; III, REMITTENT; and IV, CONTINUED FEVER of hot climates.

I. TROPICAL FEVER IN GENERAL.

The ordinary and exciting cause of the intermitting and remitting forms of idiopathic fever within the tropics, is a certain atmospheric deterioration, generated during the decomposition of vegetable matter, to which the name "malaria" has been usually given. From the identity of cause in both types of Tropical Fever, we infer the identity of these fevers, which present the same succession of symptoms and paroxysmal progress, differing only in severity. The conversion of intermittents into remittents, during the extreme heat of summer or autumn, and, *vice versâ*, of the latter into the former, on the approach of cold weather, and during winter, would authorize the conclusion that remittents are only intermittents increased in violence and malignity by an augmented irritability of the nervous system, associated with an excess of vascularity in particular organs. Whether this vascular or inflammatory action, during a generally disturbed state of the circulation, take place in the brain, the mucous coat of the stomach and intestines, or other abdominal viscera, it creates a pyrexial state of the pulse during an otherwise apyrexial interval; and the renewed febrile accessions being thus gradually protracted beyond the usual period of duration, so as to leave little or no apyrexial interval, intermittents thus assume the remittent type. It is, therefore, of the utmost importance, in the treatment of these fevers, to keep an accurate register of the relative state of the pulse and skin at various periods of the day, in order to mark their progress, and to enable the practitioner to determine whether the nervous or circulating systems be most implicated in particular modifications of them. They were observed to vary from a nervous to an inflammatory or congestive type, in proportion to the intensity of *malarious* influences produced by season or locality, and the extent of diurnal atmospheric variation dependent on situation and peculiarity of climate. In July 1823, the climate at Kaira, in Gujerat, was unusually cool and healthy, after a very hot, dry season; but the quantity of rain which fell in August being smaller than had been known for many years, the autumnal *bilious remittent* set in among the men of H.M. 4th Dragoons, with very severe symptoms of *gastric* and *hepatic* disease. It gradually increased during September, attained its maximum about the 20th of October, and was not mitigated, or disposed to change to the intermittent type, before the middle of November; fatal cases of this disease being charac-

terized, during life, by much gastric irritability, and after death, by an extremely vascular state of the mucous coat of the stomach and intestines.

The continued fever of the tropics, which chiefly prevails during the hot season, and is caused by elevated temperature, robust health, and the abuse of intoxicating liquors, is connected with derangement of the vascular system, more complete than is commonly incident to remittents. In the former, elevated temperature, and indulgence in spirit-drinking, produce an increased nervous excitability, accelerated motion of the sanguineous system, increase of carbon in the blood, with corresponding diseased secretion of the liver and intestinal canal; which organs, within the tropics, seem to perform the vicarious office of eliminating from the system the unconsumed portion of carbon with which the blood is surcharged in hot climates, consequent on the diminished volume of oxygen received into the lungs. It but differs from remittent fever, in being more exclusively connected with accelerated arterial action and diseased changes in the vascular system; but the disordering influence of the exciting causes of both, is primarily exerted on the nervous system through an increase of excrementitious matter in the blood. Farther researches are, however, required to determine the nature of those chemical changes of the circulating fluid, which, in both remittent and continued fever, precede the derangement of the nervous and sensorial functions.

Under all its modifications, we can recognize Tropical Fever to be the same malady; and that the order of events, though produced by different causes, presents the same successive changes of the nervous, circulating, and secreting systems. It is, therefore, found differing in degrees of affection of such systems, according to intensity of cause, epidemic or endemic constitution of the atmosphere, idiosyncrasy of individuals, and the previous condition of the organs affected. During those years when an excessively hot season is followed by light rain, and concurrent endemic causes favour the production of intense *malarious* influence, remittent fevers are then found prevailing, with a greater affection of the *brain* and *spinal chord* than is met with under other circumstances, when the rains are heavier and more continued, accompanied by corresponding mild weather. At other times, when excessive heat is followed by light rain and great diminution of temperature, the secretory organs, and digestive apparatus, are violently affected; the liver, at such times, pouring forth large quantities of vitiated bile, associated with great derangement of the stomach and intestinal mucous membrane. Dr. Geddes, therefore, in his excellent clinical illustrations of the diseases of India,[1] remarks with great truth, that intensely hot seasons, previous to the setting in of the rains, favoured the production of paroxysmal fever; and that the prevalence of fever during the hot months is great in proportion to the variations of temperature.

The phenomena of febrile disease, seen in its various modifications, will be more fully detailed under the heads of intermittent, remittent, and continued fever. But subdivisions of these diseases into *cerebral*

[1] "Clinical Illustrations of the Diseases of India," by William Geddes, M.D., page 94.

and *gastric*, *nervous* and *congestive*, founded on modifications and leading symptoms of disease in particular organs, will be useful guides in the general treatment, indicating how far general or local blood-letting may be necessary to subdue the increased vascular action, or how far the physician may be called on to alter diseased secretions, or remove them from the stomach and intestines by emetics, purgatives, and mercurials, before endeavouring to restore to a healthy state the diseased excitability of the sensorium and nervous system, by the use of bark, quinine, cold affusion, and other tonics.

II. INTERMITTENT FEVER.

Previously to an attack of chilliness or shivering, with which this fever generally commenced at Kaira, the patients had languor, yawning, pain of their limbs, loss of appetite, and deranged biliary secretion. The cold paroxysm was announced by vertigo and nausea at stomach, accompanied by a frequent feeble pulse. In the hot stage there was always severe headache, and sometimes sharp lancinating pain at the epigastrium. Where the patient's constitution was good, and not impaired by previous visceral disease, the headache abated, or disappeared entirely, along with the pain at the epigastrium, on the occurrence of the sweating stage. But where the inflammatory diathesis existed, along with deficient tone of the viscera, the hot stage was protracted, and the sweating stage proved insufficient to relieve visceral congestion until the action of the heart had been reduced by bleeding. This was particularly apparent in quotidians, in which some of the patients were delirious during the hot fit.

After all symptoms of paroxysmal febrile heat and increased arterial action had subsided, the disease occasionally left behind it pain and enlargement of the spleen; but, in recent attacks, it was observable that general deficiency of tone in the constitution had more effect than local congestion in protracting succeeding paroxysms, and disposing the fever to run into the remittent type. Most of the quotidians were spurious, observing no regular hour of attack; and yet there was nothing in the type that might entitle them to be classed among varieties of *tertians* or *quartans*.

The cold stage of the intermittent was occasionally absent, or at least so slight, that the patient was not sensible of it. In one case, instead of the hot fit succeeding the rigor, vomiting, and purging of a fluid resembling the washings of raw meat, followed it. Whenever the disease was ushered in by simple chilliness, it was generally connected with a deeply vitiated secretion of black or brown bile. In such cases the symptoms were less easily removable than where the secreting system was less affected; and whenever the rigors were severe, the solution of the paroxysm was speediest and most complete.

The tertian type, in one instance, was accompanied by inflammation of the colon, in another by local affection of the chest, and in several others by symptoms of liver disease. Two or three cases of the *tertiana duplex* were noticed. On one occasion the first fit of fever occurred at 10 p. m. on the 21st October, had a remission during the night, and an exacerbation on the morning of the 22nd, with an intermission following on the evening of this day, the paroxysm having lasted more than

twelve hours, and beyond the usual period of a genuine tertian. The state of the pulse was, however, pyrexial on the morning of the 23rd, while the state of the skin was natural. This being the true tertian period, a weak paroxysm came on at 3 p. m. instead of 10 p. m.; and a better marked febrile accession following on the morning of the 24th, was protracted four hours longer than its corresponding one of the 22nd; thus running into the next pyrexial accession, which commenced on the morning of the 25th: by which little or no apyrexial interval being left, the fever began to assume the remittent type.

The irregularity of intermittents is not readily explicable, nor is the condition of the system well known under which their various types are convertible into each other or into remittent fever. It appeared, however, that in the above-mentioned case, the increased volume and frequency of the pulse, where there was no headache or heat of skin, prevented the formation of a well-marked rigor at the tertian period, and thus gave rise on the following day to a renewed effort of the constitution to equalize the broken balance of excitability, and restore the impeded action of the secreting system and capillary circulation. No explanation of the cause of such conversions is obtainable from the morbid appearances visible in the brain and spinal chord of those who die of the disease, as such appearances are confined entirely to the vascular system. The state of the sensorium and nerves, preceding such conversions, is only to be inferred from the effect which cold weather has in changing remittents into intermittents, and the power which bark, quinine, and cold affusion, have in the treatment of intermittents, by preventing the return of the paroxysms. We may consider it sufficiently proved, that this state is one of *atony* of the nerves and stagnation of blood in the capillaries of the lungs,—primary effects, as would appear, of *malaria* or whatever other causes injure the existing principle of excitation or stimulus of the blood, and impede its arterialisation in the pulmonary capillaries. Dr. Currie had asserted that accessions of intermittents might be prevented by affusion of cold water, and M. Fleury has successfully employed this means, before the expected paroxysm, for the cure of intermittents without the aid of quinine.[1] The beneficial effect of the remedy evidently depends on the shock thus communicated to the nervous system and general capillary circulation; and it is to the increased tone which quinine and like tonics produce in the nervous system that they owe their curative effect.

Like intermittent fever, asphyxia and algide cholera are diseases in which the blood, being deprived of its oxygen, is loaded with carbon and gives rise to stagnation in the pulmonary capillaries, with accumulation of it in the right side of the heart. In both intermittents and asphyxia, this stagnation is the immediate effect of suspended arterialisation of the blood, which is frequently secondary in cholera, as in this disease the preternatural exhalation from the bowels renders the circulating fluid so viscid as to prevent its transmission to the air-cells of the lungs, and interrupts those chemical changes necessary to the continuance of

[1] "Bulletin des Acad.", as quoted by Dr. Ranking in "Half Yearly Abstract of the Medical Sciences," vol. vii, (1848), p. 204.

vitality and the production of heat. So forcibly indeed was this resemblance impressed on my mind, by many of the cholera cases seen in India, that I could not help regarding this disease as but the cold stage of an intermittent, in which the diarrhœa, superadded, prevented all febrile reaction. The secondary fever which affects cholera patients, after the earlier symptoms are removed, has also much resemblance to the hot stage of intermittents; and the same atmospheric constitution is found productive of both. There is also a fever peculiar to Malwa, one of those "febres intermittentes algidæ" which the late Dr. William Gray, formerly staff-surgeon in that district, described to me as the cold stage of an intermittent long continued, and attended by great prostration of strength and occasional diarrhœa. On this analogy of the two diseases, and their origin from similar causes, I find the following remarks on the diseases for May recorded in my report of the European General Hospital for 1839:—"Enlargement of the mucous follicles at the end of the ileum, and in the colon, accompanied by a similar state of the mesenteric glands, has been very generally observed in the fatal cases of cholera which happened during the month. The same alteration was witnessed in numerous cases of the disease, as it prevailed in London during the year 1832; and this morbid physical condition, which is usually attended, in children and in young people, by an excessive sero-mucous secretion, is doubtless favourable to the impression of atmospheric causes which produce cholera, but is not otherwise influential in giving rise to the disease. The immediate causes producing this fatal malady, seem connected with *epidemic* and *endemic* influence, such as produces intermittent fever, and with those atmospheric changes which at particular periods of the year, render it more or less prevalent. The attacks of cholera, when endemic, most commonly happen at the changes of the moon. Remittent or intermittent fevers, with gastro-enteritic affections and diarrhœa, are the most common forms of disease where cholera is prevalent, and partake of the same atonic and congestive character which distinguishes it. These facts justify the inference that "malaria" is the cause of both diseases; but I will not venture further than point out their connexion; for we are as little acquainted with the real nature of febrific miasm as we are with the changes of the atmosphere which give rise to epidemics. The state of the latter, however, when *endemic* cholera is most prevalent in India, is a temperature about 85 of Fahrenheit, accompanied by a close and cloudy atmosphere, impregnated with moisture, and succeeded by a fall of rain or an evident change in the weight of the air, marked by depression of the barometer. During the month the admissions for cholera took place chiefly on the 16th, 17th, and 18th, after the rain began to fall; a change which had been preceded by close, sultry weather. Cases of delirium tremens admitted were of a more than usually congestive character, proving rapidly fatal by the patient becoming comatose, his skin cold and pulse feeble, while the bowels were loose; which symptoms seemed to indicate the operation of the same prevailing cause which gave rise to cholera."

Treatment of Intermittent Fever.—It was seldom necessary to do any thing during the cold fit of intermittent in Gujerat. When

the rigors were very severe, however, sixty drops of laudanum were occasionally given with advantage, this medicine moderating the symptoms and restoring the circulation to the surface. It should not, I think, be administered too early, as there is reason to believe that in the commencement of this stage it interrupts the natural chain of events, and produces a tedious hot fit. The best time for giving it is after the cold fit has attained its height.

If the constitution were inflammatory, the previous paroxysms tedious and indisposed to perfect intermission, or if there were any symptoms of local congestion in any of the organs, one full general blood-letting during the hot fit was always attended by success; in rendering the succeeding paroxysms more regular and less difficult of solution. Whenever the natural course of the disease is interrupted by any of the causes mentioned, the patient should be bled, at least once, from the arm. If congestion or inflammation attack the head, the temporal artery should be opened; or if the affection be of the chest, cupping and leeching of the part, followed by a blister, will be necessary. When the liver was affected, and the increased circulation of that organ could not be removed by the usual antiphlogistic means, mercury was employed to produce moderate salivation; and calomel with purgatives was used in all the modifications of the disease. Such were the measures adopted to render the intermissions perfect, and prepare the system for the administration of bark:—quinine at this time not being known for the cure of intermittents. Many of the patients had their heads bathed, during the hot stage, with cold water, and derived much relief from this practice.

Cold douche to the head was more particularly useful in those cases where the regularity of the intermittent was interrupted by a want of tone in the constitution. Men debilitated by former disease and long residence in the climate could not bear general blood-letting in the intermittent; and a partial use of cold douche was found a useful substitute, by bringing on perspiration and relieving congestion of the head. Local blood-letting in such cases was, however, sometimes advisable. The patients had likewise enemata of rice-water and tincture of opium, and at bed-time they took draughts of camphorated mixture, with acetate of ammonia and nitrous ether.

In some cases, salivation proved sufficient to stop the intermittent, but in many more it failed. It was more successful in quotidians than in tertians; and when it did not succeed in curing the former, it generally changed their type into the latter. Bark was of course the principal means of cure, and where properly administered, (when quinine is not obtainable), falls not short of the great character it has acquired. In the cure of intermittents among the native soldiery of India, it is a less expensive medicine than quinine, and is nearly equally efficacious. I found then an ounce of it given in two drachm doses every hour, and immediately before the expected recurrence of the paroxysm, always diminished its severity, and put an entire stop to it about the third or fourth time. In some cases, the severity of the cold fit was increased, but in such, the duration of the hot fit was lessened. It was sometimes necessary, when it nauseated the stomach, to give it in an effervescing draught; and when it produced diarrhœa, it was administered combined

with tincture of opium. To obviate constipation, ten or fifteen grains of the compound rhubarb pill were used; but where there was much derangement of the biliary functions, brisk purging was resorted to immediately after the cessation of a paroxysm; sufficient time being thus left for the bark being again given before the period of the next paroxysmal return. Purging was more necessary in quotidians than in the other types. Failures of the bark, which have been recorded, may be ascribed more to a want of foresight in the practitioner, than to want of virtue in the remedy. When types of the intermittent are associated with an inflammatory diathesis, the secretions generally deficient, and no measures taken to remove such before the administration of bark, the medicine may prove worse than useless; and even in the administration of quinine, a combination of it with a mercurial and James's powder, along with saline mixture and nitrous ether to act on the kidneys, will be found of great utility in the cure.

In one case of quartan, the *liquor arsenicalis* was given, with complete success, after mercury, oxyd of zinc, and bark, had been used in vain. The fever was of several months standing, the secretions from the liver brown and vitiated, and mercury had failed in producing free salivation. The arsenical solution was given in a dose of ten drops, immediately before the anticipated return of the paroxysm, and put an end to it at the third administration. The cessation of the fever was accompanied by a very copious salivation, and a return of healthy biliary secretion.

32 Oxford Square, London, November 1848.

(To be concluded in next Number.)

ON THE USE OF CHLOROFORM IN SURGICAL OPERATIONS AND MIDWIFERY.

By JOHN SNOW, M.D.

I.—*Comparison of Chloroform with Ether.*—II. *Circumstances which forbid its use, or modify its action.*—III. *Mode of administering it.*—IV. *Description of its effects.*—V. *Results of its employment.*—VI. *The cases in which Chloroform is applicable in Midwifery.*—VII. *Directions for its employment.*

I. It is now just two years since the news of the Inhalation of Ether for preventing the pain of surgical operations, reached this country; and a little more than a year, since Chloroform was introduced as a substitute for it. The result of experience has been, to shew that either of these agents is capable of entirely preventing the pain of the most severe operations; and that when employed with care, and some little knowledge of their effects, they are free from danger. Although nothing can be effected with Chloroform which might not be accomplished by the aid of Ether, yet it possesses, as was stated by Dr. Simpson on introducing it, certain minor advantages,—in being less pungent, more portable, not leaving a disagreeable odour in the breath, and less frequently causing excitement previous to the insensibility; and these properties have been sufficient to enable it to be used, to the almost

total exclusion of Ether from practice. There are some surgical operations, however, in which I think that Ether should still have the preference. I allude to the reduction of dislocations and strangulated herniæ, —operations in which complete relaxation of the muscles is required: as this is more easily obtained by the use of Ether. A degree of rigidity of the muscles, which gives place to a state of relaxation, by continuing the inhalation, is liable to be induced by both vapours; but is more frequent and intense, and less easily overcome, under the use of Chloroform than of Ether.

II. Any active inflammation in the head or chest ought, probably, to contra-indicate the use of Chloroform, in the present state of our knowledge respecting it; but, as surgical operations are not undertaken, and parturition seldom occurs, under these circumstances, they can hardly be considered as limitations of its employment. Chronic affections do not appear to offer any impediment to the careful use of it. I have, on three or four occasions, administered it to patients in phthisis, requiring an operation, and several times when chronic bronchitis existed; when, so far from being injurious, it generally relieved the cough for a time. Diseases of the heart have caused more dread of danger from Chloroform than those of any other organ,—especially since the death at Mr. Robinson's. But it appears, from the evidence adduced, that the exciting cause of the fatal event, in that instance, was rather the apprehension of what was about to be done, than the vapour which the patient had but just begun to inhale, in a very diluted state. I have seen Chloroform inhaled, without ill consequences, in several operations where the heart was more or less diseased; and have lately been informed by a medical man, that he had administered it with relief to the difficulty of breathing attending advanced valvular disease. Consequently, if a patient with disease of the heart is obliged to undergo a painful operation, the Chloroform, so far from being probably injurious, is likely to be of the greatest service, by preventing the emotion arising both from the pain and the anticipation of it. But it should be carefully administered, so as to excite the circulation as little as possible; and its effects carried no further, and continued no longer, than is necessary to prevent the severe part of the pain, in order to lessen the risk of subsequent sickness, and the depression which often attends it.

The general conditions of the patient, apart from acute disease, though they modify the action of Chloroform, are no obstacle to its employment or efficiency. I have had to administer it, several times, within a few weeks after birth, as well as in extreme old age, and have seen no ill effects from its use. Children are, indeed, very favourable subjects for its action, as it does not cause in them the excitement and muscular rigidity which are occasionally met with in adult patients; and immunity from pain can generally be obtained, without any thing like coma, whilst they are apparently in a dreaming state. They are quickly affected with the vapour, on account of the activity of their respiration and circulation. This should be borne in mind in practice.

Persons whose strength is somewhat reduced from any cause, also yield more quietly to the influence of Chloroform, than those in robust health. The greatest debility is no impediment to its use. Some of the patients in St. George's Hospital, who have undergone amputations,

under both Chloroform and Ether, with a favourable result, were in such a feeble state, that, probably, the operations would not have been undertaken, except for the discovery of anæsthesia.

In patients subject to hysteria, a paroxysm is sometimes occasioned by the vapour, but it can always be quieted by continuing the inhalation.

III. Chloroform is recommended by Dr. Simpson to be given on a handkerchief: but in using such a powerful medicine as this, it is undoubtedly desirable that there should be some better means of regulating the quantity of it, in the air the patient breathes; and three cases have occurred, in different parts of the world, in which the inhalation of it, on a handkerchief, has been suddenly fatal; apparently, from the air inspired containing so much vapour, as to impregnate the blood passing through the lungs, so strongly, that it caused paralysis of the heart, on entering that organ, and circulating through the coronary artery. There are several inhalers which permit of more or less regulation of the quantity of vapour. That which I employ, has been described in the *Medical Gazette* and *Lancet*. I never give Chloroform without the apparatus, except to keep up the insensibility during operations on the face or mouth, when it cannot be re-applied, and then I use a sponge squeezed out of cold water—putting on only ten or fifteen minims at a time.

The stomach ought not to contain much food when a patient inhales, as it would probably be vomited. The recumbent posture should be chosen when it is suitable for the operation; or if the patient must be seated, it should be on an easy chair, so that he may be duly supported, when insensible. In operations on the anus, lying on the side, with the knees drawn up, is much more convenient, as far as the Chloroform is concerned, than leaning over a table or bed, with the feet on the ground. The vapour should be much diluted at first, in order gradually to blunt the sensibility of the mucous membrane of the air-passages, and thus avoid exciting cough.

IV. To facilitate the directions for giving Chloroform, the various effects it is capable of producing on the nervous centres, may be divided into five degrees. The first degree includes the slighter effects that are experienced by the patient, whilst he retains sufficient consciousness to appreciate his situation, and know what is occurring around him. The second degree is the dreaming, or wandering state of the mind, which is observed, when the patient is not silent, immediately to follow the loss of consciousness. In the third degree, there are no voluntary movements, articulate sounds, or anything indicating the presence of ideas; but there may be involuntary muscular contractions, or rigidity. The fourth degree is a state of absolute relaxation of the voluntary muscles, in which no contraction can be excited in them. The breathing is sometimes stertorous in this degree. The fifth degree is the state of impeded respiration observed previous to death, in animals killed by Chloroform. It must be stated, that the various degrees run gradually into each other, and cannot always be clearly distinguished; and that it is seldom necessary to carry the narcotism beyond the third degree, even in the most severe operations. The pulse is generally somewhat accelerated during the inhalation, but it is not a criterion of the action of the vapour.

The greater number of patients become quietly insensible, without offering any resistance; but, in a considerable part of them, there is some excitement, as soon as they lose their consciousness, and it is often necessary to hold their hands. A great number of female patients utter a singing sound at this stage of the inhalation. By continuing to administer the vapour the excitement is soon overcome. When voluntary motion, or talking, is no longer observed, it is desirable to examine the eye, to gain additional information as to the patient's state. If the eye be turned up, it is usually an indication that the narcotism has proceeded to the third degree, and the same is true of congestion of the vessels of the conjunctiva; but these symptoms are not met with in every case. The degree of sensibility of the conjunctiva is a better indication whether or not an operation will cause pain, than any other sign taken alone; but it is proper to take into consideration every symptom that can be observed. When the margin of the eyelid can be touched without causing contraction of the orbicularis muscle, or even when it causes but slight contraction, any operation can be performed without causing pain. As the effects of the vapour, unless very much diluted, continue to increase, for about twenty seconds, after the inhalation of it is discontinued, it is advisable, when the patient is nearly insensible, to intermit the vapour for two or three inspirations, now and then, or to dilute it with more air, if there be a valve for that purpose. Conducted in this way, the process of making the patient insensible usually occupies from two to three minutes; and this is safer than proceeding more expeditiously.

When the operation is not of very short duration, it is usually necessary to give a little Chloroform, from time to time, during its performance. Whilst important steps of an operation are in progress, it is best to prevent the least return of either voluntary motion or flinching; but in the subsidiary and concluding parts, we may wait till there is some clear sign of sensation. The loss of common sensibility generally outlasts the narcotism of the nervous centres, so that during the greater part of a protracted operation, the patient is usually in the second degree—often muttering unintelligibly, or talking in his dreams; and it now and then happens that arteries can be tied, or sutures introduced, without pain, after complete consciousness has returned. The protracted inhalation of Chloroform has a tendency to reduce the temperature of the body, consequently it is advisable to endeavour to keep the patient warm, both during the operation and afterwards; but this, of course, need not interfere with the exposure of the part that has been the seat of operation to the air, or making cold applications to it.

After the inhalation has been discontinued, the patient spontaneously recovers from its effects. Consciousness usually returns in a few minutes,—in some cases suddenly; in others, after a short period of incoherence or inebriation. It is best not to speak to the patient prematurely, but to quietly await the complete return of consciousness.

v. The patient, after a severe operation under Chloroform, is in a calmer and more cheerful state of mind than if he had suffered the pain; and after an amputation he seldom experiences nervous starting of the stump. These are circumstances that cannot fail to contribute to his

recovery; and as far as statistics of the larger operations have been collected, they are favourable to the practice of anæsthesia.

VI. The objections which have been made to the use of Chloroform in midwifery are nearly all *à priori* ones, and are capable of being met by replies of the same nature; but a question, concerning a line of medical practice, should be examined and decided on chiefly by experience. There are many labours so favourable, that the patient bears what pain there is cheerfully, and makes no complaint, unless it be for a few moments, whilst the child's head is passing through the external parts. In cases of this kind, which are probably the truly healthy ones, Chloroform does not seem to be indicated, and I have not seen it applied. The cases in which I have administered it, have been protracted, or attended with severe pain, or both these conditions have been combined; or they have been cases in which manual or instrumental aid has been required, and it has always afforded the greatest relief, and been attended with no ill effects, to the mother or her offspring. There was hæmorrhage after the birth of the child in one instance, but the patient had suffered from the same occurrence in previous confinements.

VII. The dose of vapour required at one time, in unassisted labour, is very much less than for a surgical operation. It is only to stop strong uterine action, in order to facilitate turning the child, that a full chirurgical dose of the vapour is required in obstetric practice; for, in instrumental delivery, there is less pain, and less necessity for the patient to be perfectly still, than in operations in which the knife is used. Chloroform should be given in midwifery, as in surgical operations, with an apparatus; or if the medical attendant be unprovided with one, he should put only from ten to fifteen minims on the handkerchief at a time. I feel obliged entirely to dissent from the practice recommended by Dr. Simpson, in the *Monthly Journal of Medical Science* for October last, of putting three or four drachms on the handkerchief to begin with. I do not dispute that he has tact enough to practice this plan without accident, but I feel sure that it will lead to fatal results in other hands. I also disapprove of his practice of handing over the handkerchief afterwards to the husband or nurse. This method of administering Chloroform is also objectionable from the quantity of vapour that becomes diffused through the air of the room; and from Dr. Simpson's account of the quantity employed, it must cost a shilling an hour more than the plan I employ. This I mention, merely to show that dispensing with the use of an apparatus is not a saving.

When the first stage of labour is tedious and painful, and the patient wearied and desponding, the greatest relief may often be afforded without altogether removing consciousness; and whilst the uterine contractions are not powerful, it is best to give but a very small quantity of Chloroform, or they become suspended, which, however, is of no great consequence, as they soon return. The best way of administering the vapour, is to let the patient inhale a little at the beginning of each pain. Commencing with the inhalation early in labour, does not entail a necessity of continuing it throughout; for the patient, knowing that she can have occasional relief, often bears the pain more cheerfully. And after the Chloroform is discontinued, it exerts sufficient influence, for a time, to counteract the persistent uneasiness there often is between

the pains, and thus to enable the patient to have short periods of refreshing sleep.

When the pains are stronger, rather more Chloroform can be given, without retarding the progress of the labour, but the effect of it should not exceed the second degree; and except in obstetric operations, the usual symptoms of labour ought to continue. The object should be only to prevent the patient's sufferings by making her unconscious; and whilst articulate complaints and loud cries are prevented, to allow the reflex or instinctive auxiliary action of the respiratory, and even voluntary muscles to continue, accompanied, perhaps, with some moaning. I believe that, with a little management, Chloroform may generally be administered without retarding the labour; and in cases rendered tedious by rigidity of the os uteri, or obstructed by an unyielding state of the perineum, Chloroform shortens the duration of labour very much, by causing the relaxation of these parts. There are instances, also, in which a moderate exhibition of the vapour seems to strengthen the reflex bearing-down efforts, which had probably been diminished by fear of the pain.

Chloroform has been given with advantage by Mr. Landsdowne, of Bristol, and others, for the relief of severe after-pains. It may be used for this purpose in some cases where it has not been required during labour.

London, Frith Street, Soho Square, December 1848.

AN ANOMALOUS CASE OF SPINAL AFFECTION.

By GOLDING BIRD, A.M., M.D., F.R.S., Fellow of the Royal College of Physicians; Assistant-Physician to, and Professor of Materia Medica at, Guy's Hospital.

[The following notice of a very remarkable case was read before the Physical Society of Guy's Hospital three years ago. Its, to me, unique character, has induced me to think it worthy of publication. The only alteration made in the original paper, has been the somewhat abridging of it.—G. B.]

No one can for any length of time be engaged in the active practice of his profession, or in the observation of disease, without encountering phenomena sufficiently puzzling to surround him with unforeseen difficulties, and often sufficiently inexplicable to force upon his mind the conclusion, that medical science, or at least the share of it falling to his lot, is by no means perfect or exact. I believe this will be granted by all whose experience has been extensive enough to produce humility; for a sense of perfection in acquirements generally goes hand in hand with limited knowledge. Although I do not assent to the Celsian dogma, *Medicina est ars conjecturalis*, still cases like the one I hope to make the text for a profitable discussion this evening, show us, valueless as are mere conjectural arguments, how carefully we must go on collecting instances, (in the phraseology of Bacon), before we can hope to draw inductions sufficiently extended to act as the keys to the obscurity shrouding the causes of many pathological conditions.

If these remarks be considered applicable to disease in general, how much more must they be so to diseases of the nervous system in particular. These still, in too many instances, continue to baffle the most penetrating physician; their ætiology being frequently most obscure, their pathology insufficient, and their therapeia unsatisfactory. Perhaps, considering how much we know of its function and structure, some of the pathological changes of the spinal chord afford for our consideration the most remarkable anomalies that are to be met with in practice. Part of these are to be explained by the fact of the difficulties attending the investigation of the morbid anatomy of the brain and spinal marrow, no less from the time and trouble attending its dissection, than from the frequently vague and indistinct evidences of diseased action traceable in it after death. Often, too, some of the most remarkable ailments, involving morbid functional and structural changes of the organ in question, are not fatal, and thus the patient's recovery presents an insuperable obstacle to the application of the scalpel of the morbid anatomist. To the latter category, the case I am now about to relate belongs; and, in detailing it, I beg the Society to recollect, that although I shall not hesitate to avow what were my own opinions formed during its progress, I purpose doing so with the utmost brevity, as I venture to offer them with the utmost diffidence.

The lady who was the subject of the following case, resided in a town in Essex, about forty miles from London. I was summoned to her on the night of September 19, 1844, to meet Dr. Baker and Mr. John Thorpe of Maldon, the very experienced physician and surgeon under whose care she was. This lady was 43 years of age, of most amiable disposition, possessed of great moral courage and firmness of mind; one indeed, who was disposed (to use her own words) "to look on the best side of everything", and in no way the subject, at any period of time, of the class of ailments set down as nervous, hysterical, etc. She had been married sixteen years, and had never conceived; menstruation was performed regularly and painlessly; her general health was good, indeed excellent, although perhaps not robust. Her circumstances in life were affluent, and she declared that neither mentally nor bodily had she experienced any anxiety for years. The following history was given me. Six weeks before my visit, whilst at church, she fancied that a gnat, or some other insect, bit her right leg a few inches above the ancle, and on returning home, as she felt some pain, she removed her stocking, and discovered two small punctures like those inflicted by a gnat. Believing that she had merely afforded a meal to one of those winged depredators, she thought no more of it, although she distinctly recollects feeling pain in the seat of the punctures all the next day. On that day she went on a visit to a town in a distant part of the county, and in the evening the leg became painful, swelling about the locality of the bites, and felt, as she expressed it, death-cold. As on the ensuing morning the swelling appeared increasing, she took alarm and returned home, and summoned her physician and surgeon. Dr. Baker informed me, that on his visit the *right* leg appeared to be the subject of absorbent inflammation; in the course of another day or two this became severe; the thigh swelled considerably, the inguinal glands became large, hard, and painful, the whole limb being

white and intensely tender, as like phlegmasia dolens as possible. This swelling and tumefaction, under judicious treatment, slowly subsided; but intense pain, apparently neuralgic, remained in the limb, most intense in the tract of the sciatic and anterior crural nerves. A few days passed over, and just as the patient was congratulating herself on approaching convalescence, and before she had left the bed, the *left* leg began to swell and become painful, and the left inguinal glands were inflamed; and this limb went through the several stages of what was regarded as phlegmasia dolens, only more rapidly, and with less pain than the other. On its recession, however, it left behind the same painful sequelæ, so that the patient was tortured by neuralgic pains in both limbs,—most intense in the course of the two great nerves before alluded to. The tract of the pain was continuous from the ischiatic notch to the junction of the last lumbar vertebra with the sacrum, where there was, to use the lady's words, "a concentration of agony,"—the slightest touch producing insufferable torture. This excessive intolerance of pressure in that region slowly subsided, and was followed by the insidious accession of the symptoms under which I found her labouring. The first of these was observed a week before my visit, and consequently five weeks after the supposed gnat-bite.

I found her lying on her back in bed, with a remarkably cheerful expression of countenance, and slightly flushed face and hot skin,—both which appeared to be owing to a medical examination at midnight, rather than to disease, as they were replaced by a cool skin and rather pallid cheek, before I left her chamber. She spoke cheerfully, and generally with a smile, as was customary with her. Pulse 88,—generally, however, being but 70; tongue clean and moist. Seeing her thus cheerful, I took her hand; and in an instant a marvellous change came over her,—the hand was convulsively contracted, the arm jerked up with almost tetanic violence, the face assumed a hippocratic expression of anguish, and she uttered a scream of pain. Proceeding with my examination, I found that when lying calmly she was free from all pain; but the slightest touch of the limbs produced these tetanic convulsions, accompanied by intense pain in the spine. It was remarkable that *a gentle touch, or fillip with the finger, produced these attacks with the greatest intensity,—a carefully-applied and firm grasp causing but little uneasiness.* The sensibility of the arm to touch, was, however, far less than that of the feet. Here the touch of a feather was sufficient to produce convulsions more intense than I have ever witnessed, save in tetanus or hydrophobia; the legs and thighs becoming of an iron-like hardness, from the violent spastic contractions of the muscles, and the pain in the lumbar region of the spine being most distressing Slighter spasms were excited in the muscles of the chest or abdomen, by a sudden touch or pressure of the integuments of these regions, provided it were applied below the mammæ; above this part, as well as on the face and neck, I was by no means satisfied that any morbid excitability existed. It was remarkable that, when the arms were thrown into the state of spasm, she always referred the pain to the upper dorsal region; and when the legs were convulsed, she complained alone of the sacro-lumbar spinal region. Ordinary sensation and motion appeared perfect, at least, so far as she could judge; for she dreaded all attempts at mo-

tion when in bed, as the mere friction of the moving limbs against the bed-clothes was sufficient to excite all the distressing symptoms I have endeavoured to depict. In the free air, and unsupported, she certainly could move her arms, and when supported by two other persons, she could readily move her legs. Her strength was nearly gone; she felt excessively weak, and could scarcely, by being half-carried, totter to her sofa; and at each pressure of the feet against the floor, spasms came on.

On examining the spine, (which was well formed), by pressure, as well as by the application of a hot sponge, I found but little pain experienced in the cervical region; the dorsal was tender, and any blow there gave her a painful thrill, with the excitation of slight spasms in the upper extremities. The pain increased in proportion as the pressure was applied lower, until the last two lumbar vertebræ were reached, where a sharp blow produced insufferable pain, and a rigidity of the legs approaching opisthotonos; the sacrum, however, could be struck, and the coccyx bent up, without pain. There was neither involuntary action, nor paralysis of the bladder or rectum; appetite excellent; bowels open daily. Urine at night, clear, neutral, sp. gr. 1020; in morning, deposited urate of ammonia, acid, sp. gr. 1028; at noon, pale like water, acid, sp. gr. 1008. All the specimens were free from albumen, and did not become alkaline in twelve hours.

I confess I found myself in no small difficulty in coming to a determination on the nature of this very curious case. I had before me a lady, naturally anything but irritable, or of nervous or hysteric temperament, who a few weeks before was in good health. She suffers, as she believes, from the bite of an insignificant insect, and within twenty-four hours absorbent inflammation commences in the bitten limb; this runs through a severe but not protracted course, nearly identical with that of phlegmasia dolens in a puerperal woman; the tension subsides, but pain in the tract of the nervous trunks remains. After a short pause, a less intense but similar state appears in the unbitten limb; the phlegmasia subsides, but neuralgia is left. The vascular action in both limbs having disappeared, the neuralgic pains appear to mutually advance, and meet: and are found in greater intensity at the sacro-lumbar articulation. A temporary and delusive improvement in general health occurs, only to be succeeded by an exalted irritability of the whole extent of the spinal chord, from the cervical region downwards, the *reflex function becoming intensely marked, quite independent of any loss of the influence of volition over the limbs, and a physiological condition being presented, resembling more closely that observed in a decapitated snake than any other.* The brain was unaffected; memory, reasoning, the senses, all perfect; motion and sensation universally unaffected. In a word, but one conclusion could be drawn; viz., that my patient was suffering from a highly irritable state of the true spinal axis, whatever else she may have been labouring under. All acute action was gone; the calm face, the clear tongue, the quiet pulse, the correct condition of the functions, all indicated the absence of any of those morbid changes included in the phenomena of inflammation, and connected probably more particularly with want of integrity in the vegetative or organic nervous system. Then, the perfect consciousness, sensibility, and volition, demonstrated the integrity of the brain; the

want of peripheral pains, the absence of morbid changes in the urine, and absolute freedom from all paralysis, shewed, at least, that there could be no important organic lesion of the spine. One series of functions of this important element of the nervous system seemed nearly alone involved, viz. those which are comprehended under the term of *reflex*, and to which the attention of physiologists has been directed by the laborious and philosophical researches of Dr. Marshall Hall. Yet my experience failed in bringing to my recollection another similar case. I could only look to tetanus and hydrophobia on the one hand, and to chorea on the other, for any justification of the opinion I arrived at, and yet I need not say, how infinitely distant were such analogies. I, however, ventured to give the following opinion; that the gnat-bite having inoculated the patient with a morbid poison, absorbent inflammation occurred as from a dissecting wound, which ran its course, involving probably in the cotemporaneous inflammation the femoral nerves; and, on the subsidence of acute action, left the patient (as is not uncommon after ordinary phlegmasia dolens), the subject of intense neuralgic pain in the affected limb. After the recession of absorbent inflammation in the other leg, the irritable state of the nerves was propagated to the spinal chord, perhaps by extension of a very low form of inflammation, and the result was the production of an exalted irritability of the spinal marrow, analogous to that produced by the inoculation of strychnia.

I am quite prepared to hear this opinion found fault with, for at least it was but begging the question. I have candidly given it in the words in which I expressed it at the time to Dr. Baker and Mr. Thorpe. I suggested the following mode of treatment.

I. Keeping up the general health, and backing up the constitution against the local disease, by bland nutritious diet.

II. Endeavouring to reduce spinal irritability by rubbing unguentum veratriæ (veratriæ, gr. viij, adipis ʒ vj), along the spine twice a day.

III. Endeavouring to restore the reflex influence more to the dominion of the will, by nervine tonics, and gently stimulating the capillary circulation generally, by the mildest alteratives. As she had taken mercurials before I saw her, I suggested sulphate of zinc, in doses of gr. i, three times a day (the dose being increased every third day), with gr. iij of iodide of potassium. I need hardly say I suggested the sulphate of zinc from its remarkable influence in chorea and allied affections.

A month passed over before I heard of her progress. The excited state of the spine had, I learnt, rather increased for a week after my visit, and then became stationary. As she did not improve, the family became anxious; farther consultation was desired, and I was again summoned on October 21st, not quite five weeks after my first visit. I found the patient as cheerful and happy as before, perhaps rather improved in health. I fancied that the spasmodic shocks—for such alone was the term I could apply to them—were less intense. I could, however, arrive at no other opinion than I had previously, and I begged a continuance of the treatment. She had borne the sulphate of zinc well, up to ℈j thrice a day. I replaced it by valerianate of zinc for a change, and substituted ung. aconitinæ (aconitinæ gr. i, adipis ʒ i)

for ung. veratriæ. I heard of her afterwards several times by letter; and, at my wish, as she was left anæmiated, iron, in the form of the ammonio-citrate, was given for a few weeks, and the nervous energy of the weakened limbs restored by carefully and gently applied electro-dynamic currents. I did not see this lady again until the 21st October, 1845, exactly a twelvemonth after my last visit; being called to a patient in a neighbouring village, I went on to her residence to see her. I was much gratified at seeing her in her drawing-room, sitting in an easy-chair, from which she rose, with but a slight effort, to welcome me. Her history, from the time of my seeing her a twelvemonth before, may be told in a few words. The state in which I left her gradually subsided, under the use of the remedies; the pain in the legs continuing after the cessation of spasms. At the end of the month the latter ceased, having been gradually and insidiously replaced by partial paralysis of motion, a condition from which she had very slowly emerged under the influence of the electricity; and when I saw her she was absolutely well, with the exception of some rigidity in the limbs, rendering assistance necessary in walking. She has managed to get to church, up a tolerably steep hill, without support.

As I stated at the outset, I do not purpose making any remarks on this case. It was to me a novel one. I have but once since seen one at all approaching to it; and it is for the members of this Society to discuss its nature. I frankly state, that my mind is by no means better made up as to the pathology of the case, than at the term of my first visit. As to my diagnosis, I give it to the Society, as I gave it to the lady's medical attendants; it led me to reason out a mode of treatment, under which, (and, I hope, to a certain extent, by the aid of which) she has been nearly restored to health. Perhaps I may be allowed to submit for discussion the following points, having, in the course of the narrative of the case, expressed my own opinion with regard to some of them.

I. Had the gnat-bites, and the consequent absorption of a septic poison, anything to do with the origin of the affection?

II. Was the supposed phlegmasia dolens really phlebitis, or inflamed absorbents? or, was the inflammation really limited to the tract of the nerves of the limbs?

III. How came the unbitten leg to be involved?

IV. Was the affection of the spinal chord confined to its theca, and secondarily only affecting the portion presiding over reflex phenomena? or, was the condition simply one of irritation?

V. Was the subsequent paralysis of motion a result of the same state of the spine which co-existed with the excited state of the reflex functions? or, was it a mere consequence of exhausted energy, such as is observed in the leg of a frog, after over-stimulating it by a galvanic current?

14, Myddelton Square, London, Dec. 1848.

BIBLIOGRAPHICAL RECORD.

A Practical Treatise on the Diseases Peculiar to Women; illustrated by Cases derived from Hospital and Private Practice. By Samuel Ashwell, M.D., late Obstetric Physician and Lecturer to Guy's Hospital. Third edition. London: 1848. pp. 772.

We purpose to give a critical and practical sketch of the present work. Its importance would deserve a more lengthened digest, as we know of no other work of the present day of equal size, and devoted to medicine, of which a third edition has been called for in an equally short space of time; we shall, however, attempt to exhibit briefly all the more prominent points of Dr. Ashwell's volume.

The work is divided into two parts. Part I treats of the Functional Diseases of the uterine system. Part II is devoted to the Organic Diseases of the internal and external female genitals.

The first subject discussed is Chlorosis, and its various local and constitutional complications. In his preliminary observations, the author gives the following terse definition: "Chlorosis ought to be attributed to an impoverished circulation, and undeveloped ovaries." This undoubtedly is the pith of the whole matter, and supplies the indications of treatment. On another point, namely, the ovular theory of menstruation, Dr. Ashwell is evidently in doubt, his own post-mortem experience having been against the unlimited reception of this doctrine, and he waits for further evidence. Here he is at issue with a vast amount of experimental physiology, and is, we think, over-cautious. The treatment of chlorotic cases, recommended by the author, is simple. Air, sun-light, exercise; attention to the stomach and intestinal canal; local and constitutional emmenagogues,—the chief place among the latter being given to the iodide of iron in moderate doses.

In the chapter on Amenorrhœa, the forms of the disorder connected with, 1, retention, and 2, suppression, of the catamenial flow, are considered. The incurable cases are those connected with congenital absence, or total degeneration, of the ovaria. The subdivisions and forms of the disorder are succinctly discussed. In the remarks on the influence of mental emotion, on the catamenial functions, the following interesting observations occur.

"Dr. Gooch relates, that a patient consulted him long after the entry of the Cossacks into Paris for an amenorrhœa, which was solely produced by the alarm she experienced on that event: and Dr. Churchill states, that almost all the women who are sent up to the Richmond Penitentiary, near Dublin, after having been tried at the recorder's court, labour under suppression, in consequence of the mental agitation and distress they have undergone. If it be asked, how these causes operate? I reply, very differently. The effects being modified, not only by the intensity of the cause, but in a great measure also, by the constitution of the individual."

The most dangerous form of suppression is the acute, occurring in plethoric subjects. Gooch has seen gangrene of the uterus; Capuron, apoplexy: and Churchill, inflammation of remote organs. Opposed to such cases are the instances of amenorrhœa which occur from mere debility in the course of chronic and exhausting maladies.

Of local Emmenagogues, Dr. Ashwell has seen good effects result from electricity; but he regards it as an uncertain remedy: of galvanism he has had no experience: of stimulant injections, a drachm of the liquor ammoniæ fort. in sixteen ounces of tepid water, is advised in amenorrhœa without local congestion: the mustard hip-bath, at 98°, twice a day, is mentioned as an

effectual adjuvant to this injection : injections into the uterine cavity, Dr. Ashwell denounces as dangerous. Of medicated bougies he has had no experience. A curious instance of the influence of mustard is mentioned from Dr. Rigby :—

"Some school-girls, for sport, swallowed mustard spread thickly on their bread; and in all the elder girls it produced menstruation in a few hours, although the regular period for its appearance had not arrived."

Dr. Ashwell speaks of this as the effects of "the exhibition of mustard by the stomach." We would rather suggest, that the mustard acted as a sinapism to the mucous coat of the stomach, and affected the mucous coat of the uterus synergetically, just as in cases where sinapisms are applied to the mammæ. Aloetic injections, leeches to the vulva, pelvic embrocations, friction, etc., are simply referred to.

Of constitutional Emmenagogues, Dr. Ashwell discusses the various claims of mercury, iron, the ergot, iodine, nitrate of potash, digitalis, savin, etc., in a truly clear and practical manner. Respecting the influence of savin, a curious fact is quoted from Dr. Davis. It is said, that in the neighbourhood of Tunbridge there used to stand a remarkably fine savin-tree, the decoction of the leaves of which were used not only to cure amenorrhœa, but to induce abortion. We are not aware whether this vegetable and irregular practitioner in obstetrics be still in existence.

The curious subject of VICARIOUS MENSTRUATION, Dr. Ashwell defines thus: "A discharge, generally of blood, from other parts than the uterus; superseding menstruation, and, in its return, occasionally observing a menstrual period." With Dr. Locock, Dr. Ashwell is puzzled whether to consider it as physiological or pathological, as it certainly lacks some of the elements of either the one or the other. The more common seats of vicarious menstruation, are the pulmonary, gastric, and rectal mucous tissues, the mammæ, the umbilicus, the salivary glands, the bladder, ears, ulcers of the surface, axillæ, etc. Of the causes of this singular affection Dr. Ashwell is doubtful; and to the various questions which may be asked respecting the common solution of the difficulty, by referring it to the suppression of accustomed secretions, and the influence of plethora, he says frankly, "I cannot answer". If the enigma can be explained at all, it will probably be on the principles laid down by Dr. Tyler Smith, in his inquiry into the cause of the periodicities of the female sexual system, and the reasons why the catamenia should return at a period of twenty-eight days. This physician has worked out the reciprocal actions between the ovaries, the uterus, and the mammæ, in a very beautiful manner; and the extension of the catamenia to some extra-uterine organ, probably depends on a divergence of the neural actions constantly going on between these organs.

On the pages devoted to DYSMENORRHŒA in its neuralgic, plethoric, and congestive forms, we shall not remark further than to say they are sound and practical. Dr. Ashwell enters into the subject of "dysmenorrhœa dependent on mechanical obstruction" very fully. His remarks are highly interesting. He is disposed to give a very qualified assent to the possibility of curing this form of the disorder by mechanical bougies, or by incision of the os uteri. An interesting case is referred to, in which both dysmenorrhœa and sterility were cured by Dr. Oldham by incision. The question of the nature of the membranous exudation thrown off in some forms of dysmenorrhœa, is pretty fully discussed. Our author is quite indisposed to receive the hypothesis of Dr. Simpson, that at each period the mucous membrane is actually thrown off from the uterine surface. For ourselves, we can see no difficulty in the way of believing that, in a periodic inflammatory affection, a false membrane should be formed, just as it is in croup and some forms of enteritis. In the treatment of dysmenorrhœa a stress is laid on the propriety of leeching the os uteri. This we can declare to be of the first importance. At the present time, even with the best authorities, there is much vagueness about inflam-

matory dysmenorrhœa. The ovaria, as the *primum movens* of menstruation, are not sufficiently taken into account; and the combination of the disease with the catamenial discharge prevents it from being treated like other local inflammations. Yet there is no disease of the female organs of more importance in many points of view. Though not a fatal malady, it often produces sterility, and destroys the hope of offspring; it is, in fact, in its various forms, *the* cause of infecundity, either by morbid changes of the uterus or of the fallopian tubes. If we made any serious complaint against Dr. Ashwell's book, it would be, that throughout he has taken no notice of sterility, except in an accidental manner.

Dr. Ashwell divides MENORRHAGIA—*first*, into simply profuse menstruation without uterine bleeding; and, *second*, profuse menstruation accompanied by direct loss of blood from the uterine arteries. The first, and most common form, is simply an exaggeration of the periodical secretion; the second is a genuine periodical hæmorrhage. The main distinction, however, which is well pointed out by Dr. Ashwell, is between active and passive hæmorrhage; the one requiring depletory, and the other corroborant, treatment.

Some excellent remarks are made, in the chapter on LEUCORRHŒA, on the amount of mucous secretion which may be considered physiological or pathological, respectively. The amount of the ordinary secretion, and its continuance in some women during a long course of years without any great distress to the economy, leads many persons to look on leucorrhœal discharges as almost a normal condition. But as Dr. Ashwell forcibly says, "It is still disease; for in health there is an accurate relation between the amount of secretion and the purpose which it serves, viz., lubrication of surface. When, from any cause, its amount is increased beyond what is necessary for this important end, it is morbid, although in many instances remedies are scarcely required for its cure." One point which has attracted our attention, relates to the presumed infrequency of inflammation of the cervix uteri in leucorrhœal discharges. Dr. Ashwell gives to that obstetric veteran, Sir Charles Clarke, the credit of having first described the symptoms and treatment of this affection. He says, moreover, that out of nearly one thousand cases at Guy's, inflammation of the os and cervix occurred only twenty times. Dr. Ashwell, however, appears to make the absence of acute pain on pressure the sign of the non-existence of this affection. Now we believe that a considerable amount of inflammation of the os and cervix may exist without the presence of severe pain on direct pressure. As regards the frequency of this affection, our experience coincides with that of Dr. Henry Bennet.

The chapter on the DISORDERS ATTENDANT ON THE DECLINE OF THE CATAMENIA, directs attention to the affections of the brain and nervous system, congestion of various organs, and structural and malignant changes in the uterine system. Of all these, cerebral disorders are the most common. Such affections are chiefly influenced by the plethora or irritability at this important epoch. Great and deserved stress is laid on the avoidance of stimuli, and the good effects of direct abstraction of blood from the uterus. The chapter on HYSTERIA is very full and satisfactory, but we find it difficult to condense it within the space we can command. Of the mental condition of hysterical patients nothing better has ever been said than the fine line of Sydenham, in which he declares them

"Constant only to inconstancy."

The same words may apply to the disorders of this state, and almost to the effects of remedies and remedial treatment.

A certain reputation is always allotted to the man who discovers a new malady, almost equal to that which attends the discoverer of a new remedy. We owe the next subject, that of HYSTERALGIA, to Gooch. The presence of intense pain without inflammation, illustrates what we have said about the presence of inflammation without pain. It must be confessed by practical men that the uterus is a somewhat contradictory organ. In the treatment of this troublesome affection, Dr. Ashwell relies on scarifications of the os uteri,

and he makes the important observation that not only are pessaries serviceable in cases of undoubted prolapsus, but in cases of the absence of that affection.

"Pessaries have long been recommended when there is decided prolapsus; but I am not aware that they have been employed in the absence of this state. I am more convinced after repeated trials, *that even where there is no marked uterine disease*, they will often give relief, provided the vagina is not unusually tender and irritable. In several instances every other measure was fruitlessly employed, but the use of a circular box-wood pessary, for three or four months, seemed really to have cured the affection."

This quotation brings us to the end of the First Part of Dr. Ashwell's valuable work.

(To be concluded in next Number.)

Practical Observations on Certain Diseases of the Chest, and on the Principles of Auscultation. By Peyton Blakiston, M.D., F.R.S. 8vo. pp. 368. London: 1848.

We have much satisfaction in directing the attention of our readers to Dr. Blakiston's treatise on Diseases of the Chest and the Principles of Auscultation. Our limits will not admit of more than a brief allusion to some of the principal chapters, etc.; but the object of this notice will be sufficiently attained, if we can induce our readers to study the work for themselves; and we feel assured that few can do so, without being repaid for their labour by the acquisition of much valuable information on the important subjects so ably treated by Dr. Blakiston.

The first chapter contains a short summary of such of the properties of sound as are applicable to auscultation of the chest, and it expresses very concisely and clearly those facts and principles which must be comprehended by the student, before he can make any satisfactory progress in the study of auscultation.

The second chapter is devoted to the consideration of the sounds elicited by striking the chest; the third to the auscultation of the sounds of respiration; and the two following to auscultation of the sounds of the voice, and of those of the heart. These chapters give little scope for originality, but they afford sufficient evidence, to satisfy the experienced auscultator, that Dr. Blakiston is a master of the science which he undertakes to teach. He excels particularly in giving a physical explanation of the manner in which sounds are produced and modified by disease. As an instance of this, we would adduce his explanation of the production of sonorous vibrations in liquid passing from a vessel into a straight tube, as from the heart into the aorta; depending, as he shows, upon—1st, the direction in which the fluid enters the tube; 2nd, its velocity; and 3rd, the nature of the surface of the vessel and tube. In the sixth chapter, Dr. Blakiston gives brief directions for the practice of auscultation, and recommends the use of a solid stethoscope in preference to a hollow instrument: the latter, as he says, would convey sounds of greater intensity, but of a quality varying with the substance and material of the instrument, being in every case different from the sound perceived by the ear alone. Some of our friends who had experience in the use of the form of stethoscope recommended by Dr. Blakiston, are disposed to prefer it to the hollow stethoscope commonly in use. It has one undoubted advantage over the hollow stethoscope, viz., that of not requiring a careful adaptation to the surface of the chest, which is so difficult to effect in the case of children, and in patients much emaciated.

Chapters VII to X inclusive are devoted to the interesting and important subject of thoracic aneurism. There is no part of Dr. Blakiston's book which we have read with more satisfaction than that which relates to the diagnosis and treatment of this disease. The cases are well recorded, present every appearance of fidelity, and all essential points are carefully noted. There

is an entire absence of all unnecessary refinement. The chapter on the diagnosis of THORACIC ANEURISM concludes with the following summary.

"A careful analysis of the signs observed in thirty-seven cases of thoracic aneurism, leads to the following results.

"No diagnostic sign was furnished by the character of the pulse, or by the presence of pulsation above or behind the clavicles.

"When a pulsation was seen and felt over a prominent spot in the chest, it indicated the presence of a sacculated or mixed aneurism.

"Purring thrill was only valuable as a sign of aneurism in conjunction with other signs.

"A systolic murmur, heard at a distance from the heart, even though it were not heard at the precordial region, only afforded evidence of the existence of aneurism when it was combined with other signs denoting the existence of a circumscribed tumor.

"A double or diastolic murmur confined to one spot, at a distance from the precordial region, denoted the existence of a sacculated aneurism. When a hollow murmur was heard, a dilated aneurism was present.

"The intensity of aneurismal murmur was in a great measure proportioned to the force of the heart's action.

"Aneurism of both kinds existed without the slightest trace of pulsation or murmur.

"Aneurisms arising within the sac of the pericardium were not indicated during lifetime by any characteristic signs."

In the treatment of thoracic aneurism, Dr. Blakiston insists upon the importance of distinguishing simple dilatation from cases of sacculated aneurism.

In the former class of cases the object is "the prevention of further dilatation or rupture by strengthening the walls of the pouch, or by diminishing the force of the current of the blood, or by both means"; while in the treatment of sacculated aneurism our object should be to effect an obliteration of the sac by a deposition of fibrine within it. The means recommended for this purpose are, the use of sedative and purgative medicines, a moderate amount of nutritious food, quiet of body and mind, and the application of cold to the surface of the chest nearest the sac. Dr. Blakiston warns his readers, and with much reason as we think, against bleeding and the general depletory system of Valsalva. Out of eight cases in which Dr. Blakiston had an opportunity of fairly carrying out the method of treatment recommended, there were five in which great relief was obtained, and three in which the treatment failed.

The four succeeding chapters are devoted to the important subject of chronic heart-diseases. These chapters abound in interesting details, and evince great labour and research, with a thorough appreciation of the practical bearing of scientific truth. We shall select one point for comment, since it is one of much interest, and one which Dr. Blakiston has investigated with great success. We allude to the manner in which CARDIAC DISEASE IS CONNECTED WITH SYSTEMIC OBSTRUCTION AND DROPSY. It has long been known that dilatation of the heart's cavities is almost invariably found in cases of cardiac dropsy. It has been a question whether the immediate cause of the dropsy in these cases has been attenuation and consequent weakening of the heart's walls, or whether in cases of dilatation with hypertrophy the excess of the capacity of the heart, relative to that which has been preserved in the blood vessels, may not have been the immediate cause of the obstruction; but cases of hypertrophy with dilatation often exist for a long time without symptoms of obstructed circulation. Dr. Blakiston therefore infers the probability of there being "either some cause of obstruction connected with dilatation as yet undiscovered, or that one of its known causes has in many instances been overlooked." Our author then relates very concisely and clearly the particulars of eleven cases of cardiac disease in which there was no obstruction of the general circulation, and twenty-six cases in which systemic obstruction

was manifested. He also gives, in a tabular form, the morbid appearances found in these cases as well as in one hundred and eighteen others. The result of this analysis is a satisfactory demonstration of the important principle that the *association of dilatation of the right cavities with tricuspid regurgitation*, is the essential and immediate cause of impeded systemic circulation and consequent dropsy. So long as the tricuspid valves efficiently close the orifice, the systemic circulation presents no evidence of obstruction, while imperfection of the tricuspid valves is at once manifested by an impeded general circulation. Tricuspid regurgitation may result either from disease producing thickening, shortening or puckering of the valves, or from simple dilatation.

In his chapter on the Diagnosis of Valvular Disease, Dr. Blakiston remarks, that a great degree of obstruction in the mitral valve may exist without murmur. This conclusion is in accordance with our own experience; but we have never yet met with one instance in which a systolic murmur, heard most distinctly at the apex, has been found to coexist with a perfect mitral valve. Dr. Blakiston has, however, observed this in two or three cases; and he is too acute and practised an auscultator to have been mistaken in his observation. In two of these cases, "the ventricular sides of the valves were covered with rough vegetations, so that, probably the murmur was caused by the blood passing over this roughened surface." Again, in several instances where mitral regurgitation must have existed, no murmur was detected during life. This we have noticed particularly when the thickened valves have left only a very narrow orifice, and when the heart's action has been exceedingly rapid.

In a very interesting and valuable chapter on Chronic Pleurisy, Dr. Blakiston thus briefly gives the results of his observations as to the issue of seventy-eight cases of the disease:—"In spite of every effort, the subjects of ten of them have been lost sight of subsequent to their recovery. The state of health of fifteen others cannot be exactly ascertained; it is only known that they are living. Of the remaining fifty-three, not one has become phthisical. Fourteen are subject to a cough, in five of whom it existed previously to the pleuritic attack. In all it is accompanied by expectoration of tough, gray-coloured mucus." The favourable result of so large a number of cases is certainly very encouraging; and as Dr. Blakiston observes,—"from these facts it is hardly too much to deduce, that, in general, chronic pleurisy is attended with but little danger either immediate or in prospect." As to the treatment of chronic pleurisy, the experience of our author is in accordance with that of Louis, in that he has seldom met with a case in which the operation of paracentesis was indicated.

Passing over the chapters on "Plastic Pneumonia," we come to the last subject treated of by Dr. Blakiston, viz. Phthisis Pulmonalis. The nature, development, causes, termination, diagnosis, and treatment, of this disease, are very ably and fully treated of. In discussing the causes of phthisis, Dr. Blakiston considers them as twofold: one class inducing the tubercular diathesis; and the other favouring the development of tubercles in the lungs, after this derangement of the constitution has taken place. Amongst the former class, he ranks *mental and physical depression*. And our own experience leads us to agree with him in attaching great importance to this cause. Phthisis has often followed an attack of influenza; and chlorosis has frequently terminated in the same disease. The following remarks are interesting:

"As illustrative of the effects of mental depression, it may be stated, that many cases seemed to arise out of an attack of syphilis or gonorrhœa. Several of the young men thus circumstanced had previously enjoyed excellent health, and were apparently free from any kind of constitutional taint whatever. In most of them, the symptoms of the venereal affection had not been violent; but, living in the constant dread of its discovery by their friends, they suffered greatly from anxiety of mind. This is only one of the sources

of mental depression, which, in my experience, has been so often followed by phthisis, that I cannot refrain from considering it to be a special cause of this disease."

In considering the treatment of phthisis, Dr. Blakiston mentions, first, *specific remedies*; and secondly, certain *plans* of treatment. He appears to have given *naphtha* a fair trial; and states that, in his hands, it has not been found either a specific remedy for phthisis, or one of any great value.

Cod-liver oil Dr. Blakiston has used in many cases, and continues to prescribe it, and to watch its action. He considers that, "although it is not a specific remedy for phthisis, its administration has been found useful in certain cases, when combined with a judicious system of regimen and diet."

Of the three *plans* of treatment,—the antiphlogistic, the expectant, and the tonic,—Dr. Blakiston, with much reason, as we think, agrees with Louis, Sir J. Clark, Dr. Graves, Dr. C. J. B. Williams, and others, in advocating the last. He recommends the union of tonic and sedative remedies; and applies this principle to the *prevention*, *removal*, and *palliation*, of phthisis, at the same time reminding the reader that: "Circumstances will occasionally arise which demand that the plan of treatment should be, to a certain extent, modified; nor does its adoption prevent our employing counter-irritation at the same time, because this remedy may be so managed as not materially to lower the patient."

In the treatment of phthisis there is but too much room for improvement and discovery. Dr. Blakiston is now, we believe, practising at St. Leonard's-on-the-Sea, where (from the concourse of invalids) he will, doubtless, have abundant opportunities of extending his already ample experience in this department. His powers of minute observation, and of philosophical analysis, as displayed in the work now introduced to the notice of our readers, testify that he is well prepared to avail himself of these advantages; and we therefore expect to find, in future editions of his work, additional and valuable results from his continued labours.

On the Influenza, or Epidemic Catarrhal Fever of 1847-8. By Thomas Bévill Peacock, M.D., Physician to the Royal Free Hospital, etc. 8vo. pp. 183. London: 1848.

Dr. Peacock acquits himself well as a faithful and enlightened historian of the London Influenza Epidemic of 1847-8. Like others, we had under treatment, simultaneously with Dr. Peacock, a large number of cases; and though, from the favourable circumstances of the majority, and our want of experience of the disease in an hospital for the destitute poor, the average severity of the cases must have been much less than that which occurred in Dr. Peacock's public practice, yet their distinctive characters were exactly those depicted in the work before us. We quite agree with the author, in considering the Influenza which presented itself in London and its suburbs, in 1847-8, as marked by an affection of the enteric, as well as of the pulmonary, mucous membrane; and that no account could be deemed correct which did not prominently bring out this important fact. In the last chapter of his work, Dr. Peacock shews that, in many former visitations of Influenza, diarrhœa and dysentery were also prominent symptoms.

The remarks on treatment are valuable. Few, who had any experience of the late epidemic, will dissent from the following statement: "On the whole, the treatment adopted was similar to that which would be enjoined in a case of severe catarrh; with this difference, however, that tonics and stimulants were employed more freely, and at an earlier period, than would, in simple catarrh, have been either necessary or desirable." (P. 81.)

We beg to draw special attention to the remarks on the treatment of cases with abdominal and other complications, extending from page 81 to page 97. They are full of sound lessons in practice, and at once commend themselves

to the practitioner, as emanating from one who has carefully studied the disease, on a large scale, at the bed-side.

Our space does not allow us to do more than transcribe, in an abbreviated form, the table of contents:—1. Introductory Review of the Commencement and Progress of the Epidemic in the metropolis. 2. Simple Catarrhal Fever. 3. Catarrhal Fever with Pulmonary Complication. 4. Ditto, with Abdominal Complication. 5. Treatment of the several Forms of the Epidemic. 6. General Remarks on the Nature and Causes of the Epidemic. 7. Illustrative cases and tables.

Clinical Observations on the Pathology and Treatment of Continued Fever, from Cases occurring in the Medical Practice of St. Bartholomew's Hospital. By Edward Latham Ormerod, M.B., Demonstrator of Morbid Anatomy at the Hospital. Pp. 244. London: 1848.

This work contains some interesting Clinical Reports. The cases were watched by the author, when under treatment by the hospital physicians. Those who have had much experience in Fever will doubtless see in the treatise of Dr. Ormerod various points suggestive of criticism, and they will regret that the facts from which he generalizes are not more numerous; yet we are sure they will regard the work as an estimable contribution to the authentic history of Fever.

The various branches of the subject are discussed in nine chapters with the following titles:—1. Fever in general. 2. The morbid poison of Fever, Contagion—Duration—and Incubation of Fever. 3. Affections of the brain, examples of the different forms and symptoms—the appropriate Treatment. 4. Affection of the lungs in Fever—Nature of the affection—Period at which it may occur—Liability of cases thus characterized to relapse—Occasionally the only prominent symptom of Fever—Incidental illustrations of the danger of collapse—Treatment of vomiting and diarrhœa. 5 and 6. Affections of the bowels—Sympathetic affections of the brain, etc.—Treatment. 7. Affections of the spleen and liver—Passive hæmorrhage—Changes of the blood, explanatory of obscure cases with severe symptoms. 8. General summary of cases—Affections of the skin, nervous system, etc. Remarks on general treatment. 9. The Miliary Fever of 1847—Its mode of outbreak—Comparison with these epidemics—Examples of the simple and of the mixed form of the disease—Relation to the form of Fever now prevalent.

Physiological, Anatomical, and Pathological Researches. By John Reid, M.D., Professor of Medicine in the University of St. Andrew. 8vo. pp. 659. Plates and wood-cuts. Edinburgh: 1848.

Our readers, even the youngest of them, must be more or less acquainted with the principal researches of Dr. John Reid; for they have been presented to the profession in every variety of form, by the medical journals and text-books, and by all recent writers on physiology in this and other countries. Still we think that, for the sake of science, it is well to have these invaluable memoirs collected from the various numbers of different journals through which they were scattered, and to have them reprinted in one volume, under the supervision of the eminent author. Experiments, involving immense labour and patience, on which important doctrines are sought to be founded, are too frequently so abridged, mangled, or misstated by compilers, that those who wish to examine for themselves a physiological question, can only do so, in a satisfactory way, by consulting the original memoirs of those with whose investigations they desire to be acquainted. Hitherto, the essays of Dr. John Reid have not easily been got at, except by those who have had access to

public libraries; but now, we not only have them collected and reprinted as they originally appeared, but we have excellent appendices to many of them, in which the labours of subsequent investigators are clearly stated and ably criticized. Dr. Reid has acted judiciously in not mingling his original with his new matter, as the progressive steps of discovery are in this way still made manifest, and the share to which each author is entitled is fully displayed.

The volume before us does not contain all the memoirs of Dr. Reid. Those omitted are, one entitled "Anatomical Observations", in the *Edinburgh Medical and Surgical Journal*, No. 128; several cases of Aneurism and Diaphragmatic Hernia, in Nos. 142 and 144 of the same journal; and some articles in the *Cyclopædia of Anatomy and Physiology*. The following are the contents of the volume:—1. Relation between Muscular Contractility and the Nervous System. 2. Order of succession in which the Vital Actions are arrested in Asphyxia. 3. Effects of Venesection in renewing and increasing the Heart's action under certain circumstances. 4 and 5. Experimental Investigation into the functions of the Eight Pair of Nerves, or the Glosso-Pharyngeal, Pneumo-gastric, and Spinal Accessory. 6. Effects of the Lesion of the Trunk of the Ganglionic System of Nerves in the Neck, upon the Eye-ball and its appendages. 7. Anatomy of the Medulla Oblongata. 8. Anatomical Relations of the Blood-vessels of the Mother to those of the Fœtus. 9. Injections of the Vessels in the Fœtus. 10. Sensational and Emotional Reflex Actions. 11. Anatomy and Physiology of the Heart. 12. Measurements of the Heart. 13. Weights of some of the Organs of the Body. 14. Structure of the Mesenteric Glands in the Balænoptera Rostrata. 15. Observations on Phlebolites. 16. Three cases of partial Hypertrophy of a Portion of the Organs of Voluntary Motion. 17. Case of Monstrosity by Inclusion; also a case in which both Kidneys were placed on the same side of the Body. 18. Case of Disease of the Spinal Chord, from an Exostosis of the Second Cervical Vertebra. 19. Report on the Epidemic Fever of Edinburgh. 20. Statistics and Pathology of the Continued Fever of Edinburgh. 21. Case of Obliteration of the Vena Cava Superior at its entrance into the Heart. 22. Contributions to Forensic Medicine. 23. Value of Experiments on the Nervous System. 24. Effects of the Entrance of Air into the Veins. 25. The Cerebral Circulation. 26. Anatomical and Physiological Observations on some Zoophytes. 27. Development of the Ova of the Nudibranchiate Mollusca. 18. Development of the Medusæ; and an Account of a New Actinia.

In the preface, Dr. Reid says, that "the state of his health prevented him from bestowing so much attention on the preparation of the appendices affixed to many of these papers, as he should have wished"; and it is pretty generally known, we believe, that if such an apology were required, it had but too sad a justification. In truth, we know, that while this volume was passing through the press, the author had, with a calm heroism, possessed only by those who can look with Christian faith beyond the grave, bid a cheerful farewell to this world, and looked on speedy release from it as his best and only hope. It has, however, pleased Providence to save him, for the last four months, from pain and impending death, by rendering successful the operation performed by his distinguished friend. For this signal deliverance let science rejoice! Most sincerely do we pray that his life may long be spared in comfort to his family, to his friends, and to that profession which he so much adorns by his character as a man, and by his well-earned reputation as a physiologist!

We must not forget to say, that the getting up of this work reflects great credit on the printer and publishers. The volume could not have been produced in better style in London.

HAND-BOOK OF PHYSIOLOGY. By WILLIAM S. KIRKES, M.D., assisted by JAMES PAGET, Lecturer on General Anatomy and Physiology at St. Bartholomew's Hospital. 12mo. pp. 705. London: 1848.

This work, as we are informed in the preface, was, during the preparation of the first portion, designed to be simply an abridgment of Dr. Baly's translation of Müller's *Elements of Physiology;* so framed as to include the principal contents of that excellent work in a volume, "proportionate to the share of time which can be devoted to physiology, as only one of the many subjects to be studied, in the period of pupillage." It was found, however, that physiology had made such rapid progress during the seven years which had elapsed since Dr. Baly's translation appeared, that it was necessary to depart from the original plan, and to recast many chapters. Those on Motion, Voice and Speech, the Senses, Generation, and Development; and the Supplement to Müller's *Elements*, lately published by Dr. Kirkes and Dr. Baly, are the only parts which are to be considered as merely abridged. Dr. Kirkes informs us that, "in writing the present work, the primary object has been to give such an account of the facts and generally admitted principles of physiology, as may be conveniently consulted by any one engaged in the study of the sciences; and, more especially, such an one as the student may most advantageously use during his attendance upon lectures, and in preparing for examinations. The brevity essential to this plan required that only so much of anatomy, chemistry, and the other sciences allied to physiology should be introduced, as might serve to remind the reader of knowledge already acquired, or to be obtained, by the study of works devoted to these subjects. For the same end it was necessary to omit all discussions of unsettled questions and expressions of personal opinion; but ample references are given, not only to works in which these may be read, but to those by which the study of physiology may be, in its widest extent, pursued." The objects of the author in writing this work, as explained in the above extract from his preface, have been amply and ably fulfilled; and, throughout, he has displayed an extensive and accurate knowledge of all the subjects embraced within the wide range of modern physiological research. He has evidently consulted the latest British and foreign authorities; and has spared no labour to render his *Hand-Book of Physiology* as complete and perfect as possible. The great value of some of the best parts of the work, such as the description of the development of the Blood Corpuscles, and of the Process of Nutrition, depends in a great measure on the information furnished by Mr. Paget, the mention of whose name, as an assistant, on the title-page, is a sufficient guarantee to the profession of the sterling merit of the volume.

Our space will not permit us to enter at any length into the discussion of the points on which we differ from Dr. Kirkes; but we may shortly refer to some of them. At page 392, when narrating the phenomena classed under the excito-motory actions, (for a knowledge of which we are indebted to the genius of Dr. Marshall Hall), it appears to us that the author has not discriminated sufficiently between the true excito-motory, and the sensational muscular movements. In the chapter on Respiration, at page 161, it is stated, that if means be taken to remove the carbonic acid from the respired air as fast as it is exhaled, "an animal may live in a limited quantity of air until nearly the whole of the oxygen is consumed." This statement can be supported by no trustworthy observations, and is at variance with the results of Dr. Snow's interesting experiments, by which it is proved that any notable diminution in the percentage of the oxygen gas, even when no carbonic acid is present, cannot take place without danger to the warm-blooded animals. In the same page, Dr. Prout's experiments upon the influence of the *period of the day* upon the amount of carbonic acid exhaled in a given time, are assumed to be correct, but we believe they have been invalidated by the later

experiments of Coathupe,[1] Vierordt,[2] and others. Dr. Kirkes, we think, attaches too much importance to the results obtained from experiments upon the cerebellum in living animals. The effects of the destruction of this organ by the knife or actual cautery, extend in a greater or less degree to other parts of the encephalon, and we should be more astonished to hear that the voluntary movements remained perfect after such disturbance of the central organs of the nervous system, than that they were seriously deranged. He might justly have applied to these experiments a remark similar to that which he makes at page 417, upon the derangement of the voluntary movements resulting from lesions of the corpora quadrigemina,—that these effects are "probably due to giddiness and loss of sight."

We have derived both pleasure and instruction from a perusal of this work; and we conscientiously recommend it to our readers, as an admirable "Hand-Book of Physiology". We do not much like the arrangement of the subjects; and the style in several passages is not quite so simple as it ought to be for the uninitiated student; but we must say, that in a somewhat careful examination of the book, we have not detected any but venial faults.

Elements of Anatomy. By Jones Quain, M.D. Fifth edition. Edited by Richard Quain, F.R.S, and William Sharpey, M.D., F.R.S., Professors of Anatomy and Physiology in University College, London. 8vo. pp. 363. London, 1848.

The editors have interwoven with the original treatise, the researches of the latest observers; and, in doing so, they have often found it incumbent on them to re-write whole chapters. So numerous and important are the additions, that Dr. Sharpey and Mr. Quain ought to be regarded as authors, at least, as much as editors of the work now before us. The numerous woodcuts, and the marginal summaries, render the text pleasant for reading, and easy to be referred to,—recommendations of no slight value, considering that the minuteness of detail, inseparable from good books on anatomy, is apt to render them heavy and repulsive to those entering upon this department of study.

For clearness and accuracy of description, combined with amplitude of detail, we may safely say, that there is no work in the English language to be preferred to *Dr. Quain's Elements of Anatomy*, edited by Mr. Richard Quain and Dr. Sharpey.

Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M.D. Vol. I. 8vo. pp. 662. London: 1848.

We cordially recommend this quarterly periodical to all who are interested in the important, and often intricate, questions which arise in connexion with the abnormal condition of the human mind. Dr. Winslow's literary qualifications, combined with his daily occupation in the successful treatment of the insane, eminently qualify him for the office of editor: and judging from the general excellence of the articles in this volume, we infer, that the staff of contributors is not unworthy of their leader. The papers consist of Analytical Reviews; Original Memoirs; Translations; Trials, bearing upon the medical jurisprudence of insanity; Miscellaneous Notices; and Correspondence. In succeeding Numbers we expect to have frequent occasion, in the "Digest of the Journals", to introduce to our readers valuable information, gleaned from Dr. Winslow's pages.

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[1] Experiments on the Products of Respiration at different Periods of the Day; in London, Edinburgh, and Dublin Philosophical Magazine, vol. xiv. 1839.

Physiologie des Athmens. Karlsruhe: 1845. S. 66.

1. A Letter to Lord Morpeth, and the Members of the Board of Health, on the Question,—Is Cholera contagious or not? By William Reid, M.D. 8vo. pp. 16. London.
2. The Health of Towns' Journal, and Record of Social Progress; Nos. 1, 2, and 3: containing Papers on Epidemic Indian Cholera, its Treatment and Sanitary Requirements. By S. Scott Alison, M.D.
3. Cholera: its Electrical Origin, Electro-Galvanic Phenomena, and Treatment by Isolation and Oxygen Gas. By Henry Holmes, M.D., M.R.C.S. 8vo. pp. 16. London: 1848.
4. Substance of Investigations regarding Cholera Asphyxia in 1832, etc., being Communications from Professor Delpech, and Dr. Coste of Montpellier, with Additional Observations on the Disease in Edinburgh and Neighbourhood. By John Lizars, Esq., of Edinburgh. Second edition. 8vo. pp. 77. Edinburgh: 1848.
5. Observations on Malignant Cholera, illustrating the Mode of Treatment best adapted to second the Curative Efforts of Nature. By Andrew Buchanan, M.D., of Glasgow. 8vo. pp. 42. London: 1848.
6. On the Treatment of Asiatic Cholera. By Archibald Billing, M.D., A.M., F.R.S. 8vo. pp. 15. London: 1848.
7. A Series of Letters on the true Pathological Nature of Cholera, and an infallible Method of treating it. By George S. Hawthorne, M.D. 8vo. pp. 64. London: 1848.
8. A Series of Letters on the Impurities and Deficiencies of Diet, being the chief Cause of Cholera; and on the Treatment of the Premonitory Symptoms of this Disease. By William Barnard Boddy, Surgeon. 8vo. pp. 40. London: 1848.
9. Symptoms and Treatment of Malignant Diarrhœa, or Asiatic Cholera, as treated in the Royal Free Hospital. By William Marsden, M.D., Senior Surgeon of the Hospital. London, 1848. 12mo. pp. 62.
10. The Cholera at Malta in 1837. From the Italian of Giuseppe Stilon, M.D., Physician to the Cholera Hospital at Valetta. By Seth B. Watson, M.D. 12mo. pp. 178. London.

The expected Advent of Cholera, in an epidemic form, has called forth a legion of dissertations on this formidable malady; and without any disposition, on our part, to undervalue the philanthropy and qualifications of the many who have undertaken to enlighten the public on the obscure points of a yet undecided question, viz., the nature and origin of the disease, we may be permitted to doubt whether the majority of the opinions now obtrusively put forth, have been conceived in a truly philosophical spirit of research. Without a more extended inquiry than has yet been made, into the nature and chemical elements of the blood and secreted fluids of Cholera patients, the philosophical inquirer is scarcely in a position to justify the advancement of any well-founded theory of Cholera. Since its prevalence, during 1832, in Britain and on the Continent, much has been done towards acquiring clearer views of its causes and mode of propagation, rendering definite its pathology, and arriving at a more scientific, consistent, and less empirical mode of treatment, than had been previously in fashion with members of the profession. The morbid appearances observed after death in the vascular system of the *encephalon*, *thorax*, and *abdomen*, have been, on the whole, uniform and instructive, as to the changes effected in these organs, through loss of vitality in the blood, and suspended functional influence of the nerves. But we have yet to ascertain the condition and chemical constituents of *choleraic blood*, *bile*, *urine*, and *intestinal contents*, by a collection and collation of facts: from such observations, much regarding the nature of the disease may be adduced. A minute microscopic examination of the cerebro-spinal nerves must be also instituted, particularly in that form of the disease called

"ganglionic apoplexy," in which the complete suspension of pulmonic chemical action on the respired air, and the consequent blueness of skin, must be looked for in secondary causes and impaired influence of the pneumogastric nerve. If, with these investigations, the medical philosopher unite an inquiry into the particular magnetic and electric states of the earth and atmosphere, under which Cholera attacks are most frequent, we should then obtain, along with a clearer view of its pathology, a more distinct knowledge of its causes, which might ultimately be made extensively applicable to the prevention, and perhaps also, though in a limited degree, to the cure of the disease.

In connexion with researches into the causes and propagation of *this* and other diseases, though not disposed to underrate the importance of the sanitary inquiries lately instituted by Government, we cannot help feeling assured that the beneficial results of many proposed measures have been too much exaggerated, and public hope raised only to disappoint expectation. Some of the sanitary enthusiasts would trace all the physical evils of society to foul air, deficient supply of water, and an imperfect system of civic drainage; and though we duly estimate the utility of improvements in such, to secure the better health of towns, we must not pass unnoticed the more weighty part of the *onus* which deficient and impure food bears in producing disease among a pauper population. We may, moreover, add our opinion, that though the existence of civic nuisances is influential in causing *endemic* and *sporadic* attacks of Cholera, yet their removal can only mitigate, but not prevent, its prevalence, should we be eventually doomed to witness the fresh advent of this disease under those general atmospheric changes and deteriorations which have given it *epidemic* currency in former years.

It is not our intention to enter into a minute critical analysis of the pamphlets before us, but simply to supply our readers, in this and subsequent numbers, with such a brief summary of the contents of those published, and to be published, as will candidly place before them the information communicated by their respective authors. In summing up, we will endeavour to give what appears to be the true pathology of the disease, so far as it has been ascertained.

The principal object of Dr. W. Reid's letter is to examine the infectious or non-infectious character of Cholera; a question to which the author brings, in discussion, an enlightened understanding, ready in its illustrations, and cautious in its deductions. In opposition to the unreserved and sweeping opinion of the Board of Health—"*that Cholera is not propagated by contagion*", we are presented, in the letter before us, with what we deem correct conclusions, drawn from the evidence we at present possess on this subject: "That if the question of the infectious nature of Cholera cannot be unreservedly answered in the affirmative, neither can it be absolutely decided in the negative." The proposition sought to be established is, that diseases which have their origin in natural *endemic* causes, may, under certain favourable conditions of the atmosphere, become so generally prevalent as to be *epidemic*, and become communicable by contact of animal bodies, and of specific infectious matter produced by their living action. Dr. Reid brings forward an apt illustration of this in the example of the Rose or St. Anthony's fire, which, within the last thirty or forty years, became contagious in Montrose, Edinburgh, and the metropolis, though usually classed among non-contagious diseases from time immemorial. It is, from this, evident, that the production of disease by contagion does not preclude its origin from causes independent of animal effluvia; and in respect to Cholera, though not inclined to adopt the extreme view of its non-contagious character, we hold it as a maxim, that it may, on the contrary, be occasionally propagated by contact; but would not recommend strict quarantine regulations as of much utility in prevention, deeming the only sanitary measures necessary to be those

which ensure ventilation, dryness, and cleanliness. Dr. Reid says little of treatment beyond approving of opium as the best remedial agent in Cholera.

In the *Health of Towns Journal* there is little requiring notice, except the papers on "Epidemic Indian Cholera", by Dr. Scott Alison. These contain an intelligent abstract of the information we at present possess regarding the causes, propagation, nature, and treatment of Cholera. Dr. Alison is disposed to consider it a disease of the stomach and bowels, in which the nervous system, the capillaries, heart, and organs of circulation are secondarily affected; and though such cannot denied to be the case in some instances, the diarrhœa and intestinal discharges must generally be considered the effect, rather than the cause, of depression in the nervous system and organs of circulation. Dr. Alison's observations possess one decided merit, viz., that they describe the disease as consisting of four stages, for which corresponding modes of treatment are proposed. On this latter head, however, we are much at issue with Dr Alison, who recommends the application of dry heat in place of hot fomentations to encourage perspiration, and disapproves of cold water, unless other remedies fail in producing a sedative effect on the stomach. But in the practice of others it has been ascertained that, in treating Cholera by salt and cold water, the ratio of mortality was much less than under any other system of treatment.

Dr. Holmes' pamphlet contains a very hypothetical theory of Cholera, and a yet untried mode of treatment. The surface of the body he considers as the negative pole of a galvanic battery, and the intestinal surface as the positive pole of the same, by which the respired oxygen of the lungs is unconsumed in the production of carbonic acid and the generation of heat; but being determined to another point, by a galvanic current it is carried off in copious acid secretions from the mucous membrane of the *primæ viæ*. Dr. Holmes' proposed remedies are—to cause a reversion of this supposed galvanic current; and isolation of the patient's bed by means of electric nonconductors, and a hot oxygen bath. These views are not a little chimerical, and as yet untried in practice; though the origin of cholera is not improbably connected with particular negative electric states of the atmosphere causing the abstraction of electricity from animal bodies.

The fourth on the list is a republication of investigations, regarding Cholera-asphyxia, in 1832, commenced by Professor Delpech and Dr. Coste of Montpelier, and continued by Mr. John Lizars of Edinburgh. The anatomical researches of the former, in this country, led to the discovery, that in all cases of Cholera, the semi-lunar ganglia, solar and renal plexus, lower parts of the pneumo-gastric nerves, and sometimes even the pneumo-cardiac plexus, are infiltrated and vascular, or in fact inflamed, so as to interrupt the functional influence of these nerves in the formation of blood, nutrition, respiration, and circulation. We admit that these appearances in the branches of the great sympathetic, form part of the effects which follow the first impressions of the exciting cause of the disease, whether this be *malaria* or a *negatively electric* state of the atmosphere; but if we seek for the true nature of this formidable malady, it will be necessary to commence with a link higher in the chain, and trace the whole series of phenomena from a loss of vitality in the blood, with consequent want of power to become arterialized. Mr. Lizars, reasoning on the observations made by M. Delpech, says that a warm, humid atmosphere, predisposing the constitution to disease, impairs the whole nervous system, but especially the ganglionic nerves; and that the pulmonary plexus becomes incapable of endowing the lungs with power to oxygenate the blood, the cardiac plexus of exciting the heart to carry on the circulation, the gastric plexus of continuing the power of digestion, the hepatic plexus of influencing the secretion of bile, and the renal plexus of giving energy to the kidneys for the secretion of urine. The consequences of this deficient nervous energy of important organs, are derangement of the chylopoietic viscera, torpidity of the cutaneous capillary exhalants,

vascular determination to the ganglionic nerves, and inflammatory spasms of the whole system. The lungs thus become incapable of separating the electric fluid from the air, inhaled at each inspiration; and this, reacting morbidly on the muscles that dilate the chest, reduces the strength and frequency of the respirations, diminishes the quantity of carbonic acid evolved, and renders the blood of the arterial system venous. The symptoms and train of phenomena are considered similar to those of intermittent or remittent fever—an observation fully established by the experience of others.

For the sake of arranging the mode of treatment, Cholera is divided into three stages, exclusive of a stage of reaction. 1. *Ordinary diarrhœa, or premonitory symptoms, raging epidemically, or occurring under epidemic influence, and which, if neglected, runs into fatal collapse.* 2. *Well-marked Cholera.* 3. *Cholera rapidly advancing to collapse.* The first stage is to be treated by confinement to bed, small doses of calomel with colocynth, followed by an astringent draught of one drachm of electuary of catechu, five grains of prepared chalk, half an ounce of the syrup of ginger, one ounce of cinnamon water, and ten drops of laudanum. In the second stage, warm enemata with laudanum, draughts of hot water, sinapisms to the epigastrium, the external application of heat, calomel with small doses of opium and aromatic confection, cold drinks and ice, are recommended. In the third stage, the treatment is to be essentially the same as in the second, but a little more active; and when decomposition of the blood has commenced, nothing can save the patient but injecting the saline solution into the veins. Mr. Lizars is also of opinion that the patient should be kept in the horizontal position during the continuance of the disease, and recommends inhalation of vapour —a practice from which the sufferer derives great relief. The mode of treatment recommended is, on the whole, most judicious, though we may differ in some particulars from the author. We conclude the analysis of his interesting pamphlet with an extract describing the manner in which the saline injection is employed. "It should be used as follows:—let a solution be prepared, consisting of 10lbs. of hot water at the temperature of about 110°, in which is dissolved a drachm and a half of bicarbonate of soda, and half an ounce of the muriate of soda. This solution is to be strained through leather. One of the veins at the bend of the arm of the patient is then to be opened, as in phlebotomy, into which is inserted a common injecting pipe of the dissecting room, and then the elbow put in a basin of warm water to exclude the atmospheric air. The common enema apparatus was employed, the tube extremity of which was adapted to the small dissecting room pipe, and now held under the water in the basin: the syringe was now plunged into the saline solution, and two or three syringefuls pumped out at the extremity of the tube still held under the warm water. The tube was carefully inserted in the nozle of the injecting pipe, and the pumping begun, and performed slowly. After a few ounces were injected, the pulse became perceptible, the breathing stronger, the skin warm, the countenance natural, the eye lost its ghastly sunken appearance, the face became full and plump, and even rosy—old age assumed the expression of youth. The cramps, the restlessness, and the thirst disappeared. It now became critical how much more saline fluid should be injected. As far as my experience goes—whenever animation, or the springs of life were fairly set a-going, then stop; for on injecting too much, the saline solution was pushed through the exhalant capillaries of the stomach and intestines, and killed the patient, by reproducing the disease, of which I have seen many instances. See M'Intosh's *Practice of Physic*, vol. I, page 369, 4to. edition."

Professor A. Buchanan republishes his observations and reflections on malignant Cholera (as it showed itself, in Glasgow, during the year 1832), with a view of being useful to his pupils, and illustrating the applicability of the modern humoral pathology in explaining the phenomena of the disease. His pamphlet is replete with good sense, accurate observation of

phenomena, and philosophic views of the chain of effects developed in the progress of a most malignant and untractable malady. It is with truth remarked, in the preface, that Cholera does not admit of empirical practice, and that a judicious adaptation of time and circumstances is necessary to render any treatment of it successful. Dr. Buchanan divides the disease into three stages, according to the nature of the intestinal discharges, which are, at first, feculent; secondly, albuminous; and thirdly, bilious. He founds on this classification of symptoms, a suitable theory of the mode of treatment, which will be found of utility to the inexperienced practitioner. One objection, however, to the Professor's classification, which scarcely exhausts this subject, is that it is founded on mere symptoms, and not on the pathological condition of the nervous and circulating systems; the morbid changes in which are only manifested by the diarrhœal discharges as mere effects. The second stage is said to be marked by the commencement of the albuminous discharge from the bowels, with concomitant sinking of the pulse. In this the discharge is said by Dr. B. to contain albumen, coagulating either by heat, or by nitric acid; but this assertion is denied by M. Andral, who considers the fluid from the bowels to be only mucus secreted in large quantities, and modified in its qualities; and that it contains neither albumen nor fibrine.

Regarding the nature of Cholera, Professor B. justly observes that it is neither gastro-enteritis nor inflammation of the muciparous glands; neither is it inflammation of the great sympathetic, a doctrine supported by Mr. John Lizars of Edinburgh, Delpech of Montpelier, and Dr. Loder of Moscow; but it is essentially a disease of the fluids, and an altered constitution of the blood, by which it loses its capability of being arterialized. In the first, or *diarrhœal period*, opiates with tartar emetic or ipecacuanha, cordial diaphoretics, and the warm bath, are the proper remedies. In the second, or *leucorrhœal period*, the free use of opiates, occasional venesection in a warm bath, the application of hot water fomentations, with liberal allowance of cold drinks, composed of milk, beaten up with a raw egg and mingled with water, are the principal means of treatment recommended. In the *cholerrhœal period*, or stage of reaction, venesection is often required, to lessen over-excitement; and occasional small doses of calomel, or blue pill, with the remedies usually employed to moderate febrile action, become necessary.

Dr. Billing's remarks on the treatment of Asiatic Cholera, though mingled with a good deal of pardonable egotism, are shrewd and to the point. He considers it a febrile disease, of which the cold stage is like that of "fever and ague"; in which he condemns the use of strong stimulants, their bad effects being visible in the stage of reaction. *In fine*, he says, *I may repeat, that I consider Cholera an essentially febrile disease, whether it assume the intermittent, remittent or continued form; that it is not a new disease, but the same described by Sydenham, in* 1669, *and subsequently by Frank.* Much of what is recommended in the manifesto of the Board of Health is condemned by Dr. Billing, who thinks that an emetic is useful, as in the cold stage of ague, and advises a table-spoonful of the following,—water, half a pint: tartar emetic, two grains; sulphate of magnesia, half an ounce; to be mixed and given every half hour. Or where the above prescription cannot be quickly obtained,—half a pint of water, a large table-spoonful of common table-salt, and a large table-spoonful of flour of mustard, are to be mixed and given in the same doses as the former. The patients are to be allowed to drink freely of cold water, and grain doses of *disulphate* of quinine, along with half a dose of the fever mixture first prescribed, are to be given from the earliest period of the attack. Cold drinks of arrow-root, gruel, or milk with water, may be given to the patient as required.

Dr. Hawthorne's pamphlet, consisting of a series of letters, originally published in the *Liverpool Mercury*, is addressed more to the public than to the profession. Its author, writing in a somewhat magniloquent style, and with

all the dogmatism of an *ex-cathedrâ* opinion, pronounces confidently, in his second letter, that *Cholera is not contagious*, after previously admitting that its progress, at least, had afforded probable proofs of the contrary; and that its capability of being transported by sea had been developed in the years 1818 and 1819. At this time its conveyance from the continent of India to the neighbouring island of Ceylon, thence to the Mauritius and the Isle of Bourbon, next to the Indo-Chinese peninsula and Siam, and subsequently to Java and Cochin China, became a matter of notoriety; though the manner in which it was progagated be yet a question. Whether the transit of this disease from continents to islands, or from one district to another, be ever dependent on communication of the affected with the healthy, or on atmospheric diffusion by particular *miasmetic* or *electric* conditions of the air, is an all important point for determination; for the view taken of the infectious or non-infectious character of Cholera, must be the basis of all sanitary recommendations for the preservation of public health. In matters of this kind, where there is room for doubt, some qualification of the author's opinion would have given us less cause, than we now have, for questioning his judgment on other points where he has pronounced a like unhesitating and affirmative decision. Among such, are his assertions, that large doses of opium are efficacious, and almost a specific in every modification of the disease, and that there is a mode of treating it, which, in a very extensive practice in his own hands, and in the hands of others under his directions, was found, when fully carried out, to be universally successful (p. 14). The professional reader will be surprised to learn that this never-failing remedy is opium, combined with camphor and capsicum. Dr. Hawthorne recommends that ten of these one-grain opium pills, of which he has given the formula, should be administered to patients suffering under the most malignant form of the disease, after having placed the body in a horizontal posture and covered it with blankets. These pills are to be followed by cordials, warm brandy punch, and the application of bags of hot salt, or sand, to the patient's feet and other parts of the body, till free warm perspiration be produced. There is nothing new in this treatment, said to be infallible; but which, however, in the hands of others, has been followed with very different results. Indeed, the Vienna and Paris returns, of the effects of opium in Cholera, show that the rate of mortality was higher under its use than under other modes of treatment. Hot air or vapour baths are condemned as useless, and, with better reason perhaps, the author denounces blood-letting. But while there is much to be condemned in this pamphlet, as an unsafe guide, either to the profession or the public, we are bound, in candour, to admit that it contains some shrewd pathological remarks; among these, the observation particularly struck us as correct, that recoveries, without medicine, from collapse, were ascribable to extreme tenuity of the blood and absence of fibrine;—physiological states of the constitution, that prove unfavourable to coagulation of the circulating fluid in the cavities of the heart.

Mr. Boddy's pages do not call for elaborate notice. Food of bad quality, we are truly enough told, impairs the tone of the system, and augments its susceptibility for receiving the impression of the exciting cause of Cholera; but when the author informs us, that locality and impure air have nothing to do with its developement, and that an active purge may be given and repeated in the diarrhœal or premonitory stage, we withhold our assent, and doubt the author's ability to unravel the complicated chain of morbid phenomena which exist in Cholera.

Dr. Marsden gives a sensible and practical view of the nature and treatment of the disease, as it appeared among the patients admitted into the Royal Free Hospital in 1832 and 1833. This work, then issued to the world as the result of Dr. Marsden's experience of the Cholera, is now published as a second edition, under an expectation that this formidable malady, which the author

names *Malignant Diarrhœa*, may soon epidemically prevail amongst us. In his opinion it is neither contagious nor infectious; but wh ether it ever becomes so is a question, to which the present state of the evidence would scarcely justify us in giving a very positive reply. We are therefore disposed to waive this, and, like the College of Physicians, to maintain a dignified reserve of opinion on an all-important but undecided matter. The author has the merit of embodying in his *Treatise* a clear description of the stages of Cholera, with a rational plan of treatment adapted to his view of its pathology. Cholera originates, he thinks, from a poison exciting certain nerves to determine the circulation to the intestinal surface, and occasion a mechanical separation of serum from the blood, till the volume of this necessary fluid is so seriously diminished as to preclude the possibility of the heart propelling its contents to reach the extremities, and preserve the action of the excretory and secretory organs; while, from the loss of its serum, it is too viscid to pass the capillaries, and thus produces vital depression of the brain and nervous system. Calomel forms the most essential therapeutic agent in the treatment recommended. Dr. Marsden's favourable opinion of its efficacy, in the first or premonitory stage, is confirmed by the strong testimony to the utility of large doses of calomel in the Cholera at Malta in 1837, given by Dr. Stilon in his book on this epidemic,—a work which, though last in our list of publications on Cholera, is of first-rate importance, and well deserving of most careful perusal by every member of the profession who may eventually have occasion to employ his skill in treating this disease. Before proceeding to analyze the well-arranged contents of Dr. Stilon's work, we are unwilling to part from Dr. Marsden without noticing that he has given several *collapsed Cholera* cases restored by saline injection.

Amidst so much discrepancy of opinion, it is refreshing to meet with such a work as Dr. Stilon's *Cholera at Malta;* for the translation of which, from the Italian, at the present moment, the professional reader must feel deeply indebted to Dr. S. B. Watson. In this little work, the predisposing causes of Cholera are clearly and philosophically considered, under the heads of *Physical*, *Physiological*, and *Pathological*; by which the understanding is guided to estimate, in due proportion, how much the origin and modifications of the disease are ascribable to general atmospheric conditions and damp situation, and in what degree they arise from, and are influenced by, age, particular temperament, fatigue, and hard labour, or previous disease. The uniformity of the anatomical observations, resulting from the *post-mortem* examinations of Cholera patients, is detailed with much precision, under the appearances in the *head*, *thorax*, and *abdomen;* and *the injected state of the neurilema of the pneumo-gastric and great sympathetic nerves*, which were of a brown colour through their whole extent, is given as confirmatory of the researches of Delpech and Mr. J. Lizars. Dr. Stilon holds it as certain that the virus engendered by Cholera obtains *primarily*, or *secondarily*, its power in the stomach and intestines, and then describes minutely the symptoms characterizing the various stages of the disease. The physiological nature of the more remarkable symptoms is next examined and explained; and after a consideration of the methods of different physicians in the treatment of Cholera, we are made acquainted with the remedies employed with most success in the treatment of this disease at Malta. These are calomel in large doses, instead of astringents, for the symptoms of the premonitory stage; and two of our author's practical observations are particularly worthy of remark, as being in complete accordance with our own experience,—that purgatives sometimes accelerated the stage of collapse; and that, in the latter, opium was frequently injurious, making the patient pass from the mild to the grave form of this stage. Iced water and cold baths were successfully tried in the severe collapsed state, and were followed by the immediate reanimation of the patients, and marked ease, particularly throughout the course

of the intestines, and the region of the stomach. In most of these cases, the use of cold bathing was succeeded by severe reaction ; the practical directions regarding which, and the necessary prophylactics for preventing attacks of Cholera, are conceived in a trustworthy spirit of research. We recommend the perusal of this little volume to our readers.

The manifest amount of discordant opinion amongst our authorities,—nay, the complete antagonism between the non-contagion doctrines advocated by the Board of Health, and the institution of quarantine by the Privy Council, is calculated to distract the public mind, shake general confidence, and excite a suspicion that, in the matter of Cholera, and of medicine generally, there can be but little truth, and no certain knowledge. But the sins and incapabilities of individuals, who possess not habits of mind fit for scientific inquiry, must not be falsely ascribed to the state of the profession itself, which, as Dr. Reid has well expressed, " by every day's experience, every succeeding generalization of facts, is insensibly securing for Medicine a more solid, permanent, and enlarged basis, while the hazy atmosphere of hypothesis is dissolving before the clear and sharp horizon of truth." The College of Physicians have greatly reassured the public mind by their sensible and seasonable manifesto, in opposition to the crude circulars and notices of the Board of Health; which, in justice to our profession, we must state, is not a Medical Board.

(To be continued.)

Practical Pharmacy : the Arrangements, Apparatus, and Manipulations of the Pharmaceutical Shop and Laboratory. By Francis Möhr, Ph. D., and Theophilus Redwood. Illustrated by 400 Engravings on wood. pp. 390. London, 1849.

This work consists of adapted and translated chapters from Dr. Möhr's *Manual of Pharmaceutical Technology*,—a work which deservedly enjoys a high reputation on the Continent,—and of original matter by Mr. Redwood, constituting two-thirds of the volume. The following is a short summary of the very varied contents of the work before us. 1. *General Arrangements of the Shop or Dispensary ;* including arrangements for heating, lighting, etc.; with a description of the laboratory, store-room, drying-room, and powdering-room. 2. *Special Arrangements, Apparatus, and Operations ;* embracing information as to the drying-closet, steam apparatus, distillation, digestion, infusion, vaporization, preparation of tinctures by maceration and by percolation, weighing and measuring, stoppering, tying of knots, luting, casting of various caustics, etc. etc. 3. *Dispensing of Medicines ;* viz. mixtures, draughts, drops, emulsions, etc.

To the dispensing druggist, we imagine, this work will supply a desideratum which has long been complained of; and to medical men, who, from choice or necessity, have their prescriptions compounded at home, many of the chapters are likely to prove useful. We would also recommend the book to such practitioners—too numerous a class we fear—as have not yet given adequate attention to pharmacy, and who from their ignorance of, or want of familiarity with, the physical and chemical properties of the ingredients which they order to be combined, embarrass the dispenser, and not unfrequently defeat the aim of their own prescriptions. It is humbling to our profession, that Mr. Redwood should require thus to discourse to dispensing druggists on the "*reading of physicians' prescriptions.*" " When," says he, " a prescription is intended for preparation, the first thing to be done is, to read and understand it. This is sometimes the most difficult part of the dispenser's duty. It requires the exercise of serious attention, quick perception, sound judgment, and prompt decision. The writing in prescrip-

tions is often very bad, and the words are mostly abbreviated; moreover, the language in which prescriptions are written is, in the majority of cases, very imperfectly known to both the writer and the reader. There are, it is true, but a limited number of formal expressions which are commonly used for conveying the requisite instructions, and a knowledge of these is easily acquired; but the pharmaceutist will not be qualified for his duties as a dispenser, if he possesses only a knowledge by rote of the expressions most frequently used in prescriptions. The prescription is intended as a medium of communication between the prescriber and the dispenser, and an acquaintance with the language in which it is written is quite as necessary to the latter as to the former. The dispenser has a two-fold difficulty to contend with; he must first decipher, and then translate the writing of the prescription. Moreover, he must do this, not only correctly, but promptly. If he stand poring over the prescription for too long a time, it may induce a suspicion on the part of the customer, that either he is ignorant, or the physician careless. Nothing should be done that could possibly tend to weaken the confidence of the patient in prescriber or dispenser."—p. 335.

As mistakes and perplexity sometimes arise from the change which has been introduced in the *capacity of the pint measure*, we beg to draw attention to the following statement. "Medical men sometimes order half-a-pint or a pint of liquid under the impression that these quantities are still, as formerly, equivalent to f ʒviij and f ʒxvj, whereas the capacity of the pint is now = f ʒxx. The pharmaceutist has but one safe and straightforward course to pursue in these cases. In the absence of specific instructions to the contrary, his text-book and guide is the *Pharmacopœia;* and, according to this authority, the symbols Oi and Oss, are synonymous with f ʒxx and f ʒx."—pp. 338, 339.

We quite agree with Mr. Redwood in thinking that when the prescriber is unacquainted with the method of forming a pill, he had better leave the choice of an excipient to the dispenser. On this subject Mr. Redwood remarks:—"The physician frequently names, in the prescription, some particular excipient, which is directed to be used. Whenever this is done, the instructions of the prescriber should be carried out if practicable. It is not always, however, that this is practicable, and then the dispenser must follow his own judgment. It would be much better that the selection of excipients in these cases should be always left to those who dispense the medicines, as the prescriber rarely possesses the practical knowledge requisite to enable him to determine what kind of excipient is required. We frequently find two or three soft extracts, which when combined are too soft to admit of being properly made into pills, ordered to be mixed with mucilage or syrup *quantum sufficiat*. In this case, although the dispenser cannot act up to the letter, yet he may carry out the spirit of the instructions, by using gum or sugar."—p. 350.

From the extracts which we have given, it will be seen that the profession, in the estimation of Mr. Redwood—who speaks, we fear, from indisputable data—neglect the study of the Materia Medica and Pharmacy to such an extent as to make it necessary, as a matter of routine, for the shopmen to revise and amend our prescriptions. It may be undignified in doctors to make a pill; but is it to their credit to be told by Mr. Redwood, that, as a body, they cannot give instructions how this is to be done? The physician should certainly have such a general acquaintance with the more common manipulations of the apothecary's shop, and with the physical and chemical properties of drugs, as to enable him to write prescriptions correctly, and even to compound them skilfully, if circumstances should ever render this necessary.

THE PERIODOSCOPE: WITH ITS APPLICATION TO OBSTETRIC CALCULATIONS AND THE PERIODICITIES OF THE SEX. By W. TYLER SMITH, M.D., London, Obstetric Lecturer in the Hunterian School of Medicine. 8vo. pp. 47. London: 1848.

The Catamenial Cycle, like the lunar revolution, occupies twenty-eight days; consequently, there are thirteen catamenial, or lunar months, in the year. Dr. Tyler Smith has applied this fact to a novel use in his Periodoscope.

Our readers must first imagine one circle with the twelve calendar months marked out upon it, each month being divided into days, and the days of the month being numbered five, ten, fifteen, etc., for the convenience of reckoning. On the outside of this circle, which is about three inches in diameter, there is another circle, somewhat larger in size than the first. This larger circle is divided into the thirteen catamenial cycles which make up the year. The inner circle is finely engraved on card, and fixed in the centre by a silver rivet, which admits of a circular movement, within the outer, or catamenial year. Here we have at once a simple and efficient mechanism for reducing catamenial to calendar months, and *vice versâ*. The first five days of each catamenial cycle are marked, as the days during which the catamenial flow takes place; while the remaining twenty-three days constitute the interval. The following will illustrate the use of the periodoscope, as far as the catamenia are concerned. Suppose any female to have the catamenial secretion commence on the 1st of December: if we turn the moveable central disc so as to make this date correspond with the commencement of a catamenial period, we then have, for a whole year, the dates pointed out at which the catamenial flow will happen. Indeed, this is true not only for a whole year, but for the whole period of life during which the catamenia continue. As long as the catamenia remain regular, so long will the periodoscope be a perpetual Calendar of this function.

The duration of pregnancy is considered by the best authorities to comprise ten catamenial cycles, or two hundred and eighty days. The periodoscope, therefore, has upon the outside of the catamenial year, a segment of a third circle, consisting of ten catamenial cycles, or the term of natural gestation. An arrow is engraved at the commencement of the two hundred and eighty days, and another arrow at the termination of this period upon the scale. Now, suppose any woman to have conceived on the first of January, all we have to do is to turn the inner disc so as to make the arrow at the beginning of the parturient scale point to that date, when we have immediately the other arrow pointing to the date at which parturition may be expected. We should observe that Dr. Tyler Smith has constructed the periodoscope on the principle that impregnation generally occurs immediately after the catamenial flow has ceased, and that parturition comes on, or the changes which forebode labour appear, on the commencement of the tenth period after conception, exclusive of that period subsequently to which impregnation occurred. However, whatever date the accoucheur may reckon to or from, the periodoscope is equally serviceable, as the calculation may be commenced from any date.

But not only is the scale of forty weeks useful in this manner; the measuring rod of pregnancy, to speak figuratively, is also divided into its ten catamenial months, so that for any given pregnancy we have marked out the termination and the dates of the catamenial times of pregnancy, at which dates it is well known that abortion and various accidents, with all the other phenomena of gestation, principally take place. At any day during pregnancy, at which a practitioner may be called on to prescribe, he can observe at a glance whether his patient is at a catamenial date, or in the interval between two dates; information which in many cases becomes of extreme value.

Thus the periodoscope, as its name implies, gives a perfect view of all the periodicities of the sex, whether during the unimpregnated or impregnated

states, and this not of one woman alone, but of every subject to whose periodicities it may be applied.

The instrument must be considered not only as a calculating machine, but as a felicitous diagram of all the sexual functions of the human female. As a mere diagram, it is to the sexual periodicities what a moving orrery is to physical astronomy. As a new instrument, it is of importance for the convenience of the practitioner in individual cases; and it will prove of the highest value as a means of determining much that now remains doubtful respecting the periodicities to which it refers, such as the duration of pregnancy, the times at which abortion occur, etc. For instance, many accoucheurs have the records of hundreds, and even thousands of cases, containing the dates of quickening, the last menstration, parturition, etc., but which to be made available would require a formal sum in arithmetic to each case. The difficulty of handling a large number of cases by the ordinary method is such, that the task is seldom attempted. With the periodoscope, one turn of the instrument is all that is required, and the prominent points of the most complex case are instantly brought into view. The instrument will both offer greater facilities for obstetric records, and greater facilities for applying these records to practical purposes. It is in these points of view that we consider it of the highest importance. The substance of the present work originally appeared in the *Lancet*, as a part of Dr. Tyler Smith's very able and highly original course of Lectures on Parturition and Obstetrics, recently published in that journal.

Contributions to the Pathology of the Kidney. By Wm. T. Gairdner, M.D. [Wood-cuts.] pp. 54. Edinburgh: 1848.

Without pronouncing as to the accuracy of the author's observations, we may say, that the memoir bears internal evidence of proceeding from an accomplished and pains-taking pathologist; and as the work of such a man we now direct attention to it. The illustrative cases are not the least valuable part of the essay. We do not admire Dr. Gairdner the less, that he speaks guardedly on disputed points. In the course of the inquiries in which he is now engaged, we hope that he may be able to form some opinion as to the anatomical relations and functions of the Malpighian bodies. Waiting the author's promised researches on the urine, and on the pathology of the diseases of the Kidney, we, in the meantime, transcribe the concluding summary of the present memoir.

"1. By far the greater part of the pathological lesions of the kidney arise from or are connected with, the exudation of oleo-albuminous granules into the interior of the tubes and epithelial cells.

"2. The oleo-albuminous exudation is probably often preceded, and certainly occasionally accompanied, by vascular congestion; but when the quantity of exudation is considerable, more or less complete depletion of the vascular system invariably occurs. This is a secondary result of the obstruction of the *tubuli uriniferi*.

"3. The oleo-albuminous exudation occurs in two chief forms; viz., *first*, Universal infiltration of the tubes throughout the organ; and *second*, Infiltration of particular sets of tubules, the rest remaining free, or nearly so. In the latter mode arises the granulations of Bright.

"4. There is no essential anatomical difference between the exudations in the kidney which are the result of chronic processes, and those which have been considered as the result of inflammation.

"5. The capillary vessels of the kidney are subject to spontaneous obliteration (unaccompanied in the first instance by any visible lesion of the tubes), giving rise to the peculiar affection which I have called the *waxy degeneration*. This obliteration of the vessels is probably in all cases preceded by a stage of congestion.

"6. The consequence of the waxy degeneration is thickening and varicose dilatation of the tubuli, throughout the organ.

"7. The tubes of the kidney are subject to contraction and obliteration, in consequence of the desquamation of their epithelium; a condition resulting in atrophy, and complete disorganization of the organ.

"8. The desquamation of the epithelium occurs very frequently in all the other diseased conditions of the kidney. When sufficiently long-continued and extensive, it produces contraction, and this indifferently whether exudation be present or not. It is sometimes accompanied by vascular congestion in every stage of its progress.

"9. The earlier stages of the exudations can only be discovered by means of the microscope. The progress of the waxy degeneration, on the contrary, is best traced by the unaided eye. The desquamation of the epithelium is only to be discovered with certainty by means of the microscope, and is particularly apt to escape attention, under all circumstances, if the *kidney* only, and not the *urine*, be looked to. It results that careful investigation, both by the microscope and the naked eye, both of the kidney after death and the urine during life, are indispensable to enable the pathologist to determine with exactitude the presence or absence of disease."

The Objects of Medical Study, and the Spirit in which they should be pursued: being an Introductory Lecture delivered at the Medical School attached to the London Hospital, October 2, 1848. By W. B. Carpenter, M.D., F.R.S., etc. [From the *London Medical Gazette.*] 8vo. pp. 15. London: 1848.

We strongly recommend this Address, not only to those on the threshold of their medical career, but to all our professional brethren. It may stimulate them to love and cultivate their profession, not only as affording an honourable subsistence, but as furnishing one of the noblest fields for scientific investigation, and the exercise of Christian philanthropy. Like everything which has proceeded from the pen of Dr. Carpenter, the composition is clear, forcible, and elegant.

British and Foreign Medical Review. Edited by John Forbes, M.D., F.R.S. Vol. XXV.: being a General Index to the preceding twenty-four volumes. pp. 303. London: 1848.

Most of our readers are aware that at the close of 1847, the *British and Foreign Medical Review* (of Dr. Forbes), as well as the *Medico-Chirurgical Review* (founded and long edited by the late Dr. James Johnson), ceased to exist; and that in their room, and as their representative, the *British and Foreign Medico-Chirurgical Review* appeared in January 1848. The work before us is an elaborate index to the complete series of the first-named periodical. To all who cultivate the literature of their profession, we cordially commend this index, as affording an admirable guide to the works both of British and Foreign medical authors, published between 1837 and 1847. It is calculated to be of much use even to those who do not possess the Review, as it will direct them to the particular volumes of it, or of other works which they may require to borrow from such public or private libraries as they have access to.

CRITICAL DIGEST OF THE BRITISH AND FOREIGN MEDICAL JOURNALS.

ANATOMY AND PHYSIOLOGY.

STRUCTURE OF THE VITREOUS HUMOUR.

In a paper in the *Dublin Quarterly Journal of Medical Science* for August 1848, Mr. William Bowman, after noticing the researches of Pappenheim,[1] of Brücke,[2] and of Hannover,[3] on the internal construction of the vitreous body, as disclosed by treating it for a certain period with solutions of carbonate of potass, of acetate of lead, and of chromic acid, and then making careful sections of it in various directions,—gives a precise and accurate account of his own examinations of this part in man, and in many of the inferior animals. From these researches we have extracted the following points.

In man, the vitreous humour, exposed to the action of dilute chromic acid for a year, and then sliced, displays a series of alternate light and dark layers, for the most part parallel to the outer surface. These extend inwards about one-eighth or one-fourth of an inch; and in front seem to run up to the suspensory ligament of the lens, and to the posterior capsule. More internally, there was evidence of small canals traversing the vitreous body in a central direction; while in its middle region there was an irregular cavity, apparently formed by breaking up of the tissue.

Mr. Bowman then adverts to the appearances produced in the vitreous body by bringing it into contact with solution of acetate of lead, according to the method of Brücke. In these experiments, the fresh eyes of mammals were used. The latter author placed the entire globe, or at least the entire vitreous body, in the solution; and on finding a very beautiful system of concentric layers of precipitate, parallel to that surface, (formed after a certain period of immersion), concluded that they arose from, and demonstrated the existence of, a true system of concentric membranes in the substance of the vitreous body,—the precipitate, which occasioned the white colour, being, as he imagined, stopped in its progress inwards by the membranous sheets successively encountered.

Mr. Bowman, however, not feeling satisfied that this conclusion was a legitimate one, repeated and varied the experiments, by exposing to the action of the salt of lead, portions of the vitreous body previously cut in different directions,—and in all instances found the layers of precipitate deposited parallel to the surface, whether that surface were the hyaloid, or one formed by the knife. The necessary inference from this interesting fact, seems to be, that this elegant deposit of the precipitate, in distinct layers one within the other, is to be ascribed to some physical cause connected with the phenomenon of imbibition, and not to any pre-existing structure or arrangement of membranes. Of this cause no explanation can be afforded by the laws of endosmose, as at present known.

Mr. Bowman also describes the appearances produced in the vitreous body of a mature human fœtus, by the prolonged action of dilute chromic acid, and which are among the most interesting of the whole. He finds, at the region of the yellow spot, a cup-shaped evolution of the retina, into which the

[1] Specielle Geweblehre des Auges. Breslau; 1842, s. 182.
[2] Müller's Archiv., 1843, s. 346, and 1845, s. 130.
[3] Entdeckung des Baues des Glaskörpers. Müller's Archiv., 1845.

vitreous substance does not enter. The vitreous substance also exhibits a fibrous radiation from the hyaloid canal (that extending from the entrance of the optic nerve to the back of the lens, and conveying branches from the central artery and vein) towards the hyaloid surface, countenancing the opinion of Hannover, that the human vitreous body is formed in segments comparable to those of an orange. In the coagulated vitreous of the human fœtus, Mr. Bowman finds an elegant fibrous structure, like that of the enamel pulp.

The author attributes no value to the assumed evidences of structure afforded by congelation of the vitreous body. Mr. Bowman then explains the results of his observations on the vitreous body, in birds and fishes; and concludes that, in the latter especially, there is good ground for believing that it contains a true system of lamellæ, proceeding from the junction of the choroid and iris, to the lens, and contributing to the mechanical support of this large and solid part in the eye of the fish.

The paper is illustrated by sixteen wood-cuts, for which we must refer the reader to the original memoir.

EARLY PREGNANCY: AND INFANTILE MENSTRUATION.

In the *London Medical Gazette* (p. 751), for 3d Nov. 1848, Mr. John Smith publishes a recent case of EARLY PREGNANCY. It is interesting, not only from the extreme youth of the mother, but from the fact of her having borne a living and tolerably healthy infant. The following is Mr. Smith's narrative:—

"At the Coventry Assizes of August 1848, Julia Amelia Sprayson preferred a charge of rape against her uncle, James Chattaway, who was convicted of the assault, and sentenced to two years' imprisonment and hard labour in the House of Correction. The girl was far advanced in a state of pregnancy, and as it is of rare occurrence for conception to take place at so early an age as *between eleven and twelve years*, many surmises were expressed by the gossips as to what would be the probable issue. She continued in good health up to the day of delivery, which took place on the 16th September 1848. In the early part of the morning she became restless and uneasy; and from the hour of 11 A.M. slight pains occurred at irregular intervals, until about 5 P.M., when it was evident that labour was rapidly advancing. On being sent for soon after, in consequence of the absence from town of Dr. Dewes, who had been engaged to attend her, I proceeded to make an examination, when I found the pelvis of average dimensions, and the os uteri about the size of a shilling piece; but as the parturient throes were active, and returned every eight or ten minutes, it appeared prudent to remain until the case had terminated. Nothing remarkable supervened during the progress of the labour, except that it was of unusually short duration. From first to last she was not more than ten hours ailing, while the period of actual labour was not extended beyond four hours, and this would have been further shortened but for the smallness of the external outlet. The subsequent symptoms were just as favourable as the labour had been short. The lochia ceased after the lapse of a few days: the mammæ became duly developed, and the secretion of milk was so copious as presently to suggest to her mother the idea of seeking for a situation as wet nurse. The infant at birth was long, slender, and emaciated, but rather below the average size, and in many respects may be said to have borne a striking resemblance to the offspring of mothers who had been imperfectly nourished during pregnancy. It did not occur to me at the time, either to place it in the scales, or to take its admeasurement, but at the time of writing this report (23d Oct. 1848), it is $8\frac{1}{4}$ pounds in weight. The present weight of the mother is $104\frac{1}{2}$ pounds. When she had so far recovered as to take a share in domestic avocations, it seemed advisable to pay her an early visit, to elicit if possible some farther information than what had transpired in court, with a view of establishing

some data as to the period of utero-gestation; and although foiled and disappointed with the result of this part of the investigation, some particulars of interest were readily obtained. She was rather of prepossessing appearance, of fair complexion, with brown hair and dark grey-eyes; more womanly by far than is usually witnessed at her age, her figure being tolerably plump, well set and proportioned, and her height being rather more than five feet; and notwithstanding her casually childish manner, there was that forwardness of expression which betokened a more than ordinary development of character. On inquiry her mother assured me that she began to menstruate when *ten years and six weeks* old; and it was distinctly ascertained that there had been a regular return of the catamenial discharge, in somewhat profuse quantity, up to the period at which conception took place. The girl had lost her father about two years ago, and that she might not be a burden to her widowed mother, had been in residence with her uncle, who was a weaver at Foleshill. This unhappy man, who proved her seducer, was aged forty-seven, living with his wife, to whom he had been married twenty-five years, and by whom he had had a family of two or three children. The niece was taught to weave at a handloom, which stood in the same apartment in which her uncle pursued his daily employment; and here it would seem that familiarities arose which issued at length in criminal intercourse. This latter took place for the first time about the middle of November 1847, and was allowed to be repeated on four occasions at weekly intervals; but as the catamenia had appeared during the last week of that month, and did not recur in the Christmas week, she dated conception from the latter period. No communication was made to her relations of what had transpired until six months had elapsed, when her situation became too prominent to elude further observation, and then it was that arrangements were made for bringing her under the maternal roof; and means were taken for delivering her seducer into the hands of justice.[1] The most rigid inquiry failed in deducing any farther particulars that could be at all relied on as authentic information. .... I have been at the pains of consulting the registers both of her birth and baptism. The former bears the date of February 13, 1836, and the latter March 7th, of the same year."

Early Pregnancy.—In connexion with the above, the following notes of cases of early pregnancy may be interesting to many; the more especially at present, when we may expect to hear of similar, or more remarkable cases, occurring in those continental cities which have lately been the scene of revolutionary license. That the aptitude of the human female for conception at a tender age is greater than is commonly imagined, we may infer from the fact that during national convulsions (in which the bonds of social order and decency have been broken), cases of early pregnancy have been observed to be of more frequent occurrence. During the revolution in France, at the close of the last century, several instances occurred of females of eleven, and even below that age, being received, in a pregnant state, into the Maternité at Paris.

1. Sir Everard Home says, "I have met with corpora lutea in virgins at fourteen, and know of two instances of girls still earlier, one at thirteen, the other at twelve."—*Phil. Trans.* 1819, p 61.

2. Montgomery (Dr. W. F.), says, that "the earliest instance of preg-

[1] Sexual intercourse with a girl under ten years of age is a capital crime, even when no violence has been used; but a different punishment from death is assigned to the offender if the child be above ten, and yet under twelve; above twelve, *consent* is legally possible (9 Geo. IV, c. 31). Such is the law of England. In Scotland the crime is rape if the girl be under twelve: but is not punishable by death however young she may be (5 Victoria, c. 56). Why is there a difference in the criminal law of the two parts of the United Kingdom, regarding a matter which could be so easily adjusted?

nancy known to him, was that of a young lady who brought forth twins before she had completed her fifteenth year."—*Signs and symptoms of Pregnancy*, p. 163. Dublin: 1837.

3. Robertson (Mr.), of Manchester, mentions a case which occurred in the practice of Mr. R. Thorpe. It is thus quoted from the *Edinburgh Medical and Surgical Journal*, vol. xxxviii, p. 231, by Dr. Montgomery:—"She had been employed in a cotton factory, and was represented to have become pregnant in her eleventh year. Mr. Thorpe and the late Dr. Hardie were at the trouble of examining the registers of her birth and christening, and fully satisfied themselves that she had really conceived during the eleventh year of her age, and that at the time of her delivery she was only a few months advanced in her twelfth year; her figure was that of a well-grown young woman, with fully developed mammæ, and it was ascertained that she had menstruated before she became pregnant."—*Op. cit.* p. 162.

4. Rowlett (Dr.), of Waisborough, Kentucky, reports, in the *Transylvania Medical Journal*, vol. vii, p. 447, the case of Sally Deweese, born 7th April 1824, in the county of Butler, Kentucky. "She began to menstruate at a year old, and the pelvis and breasts became developed in an extraordinary degree: she continued to menstruate regularly up to 1833, when she became pregnant, and on the 20th April 1834, she was delivered of a female child, weighing seven pounds and three quarters. At the time of publishing the case the child weighed eight pounds and three quarters, and the mother 100 pounds, and was four feet seven inches in height."—(As quoted by Montgomery, *Op. cit.*, p. 162.)

5. La Motte delivered a girl who had not completed her thirteenth year, and who had never menstruated.—(*Traité des Accouchemens*, Obs. xxiii, p. 52, as quoted by Montgomery, *Op. cit.*, p. 163.)

6. Ryan (Dr. Michael), knew of a female pregnant at 12½ years of age.—*Medical Jurisprudence*, p. 242. London: 1836.

Infantile Menstruation.—The following are a few curious instances, some of which certainly may be considered as puberty at an infantile age:—

1. Embling (Mr.), in the *Lancet* for January 29, 1848, gives the following case:—At the date when the account was published, the child was three years old, and had during some preceding months menstruated regularly. The mammæ and nates were as fully developed as in an adult of twenty; the labia, etc. were like those of a mature young woman; the hymen was perfect; the vagina anteriorly was of large size; and on the pubes there was a slight growth of hair. The countenance, appearance and gait were in miniature those of an old woman. At her menstrual periods, she suffered the uterine, lumbar, and other pains common in women capable of utero-gestation.

2. Dieffenbach (Dr.), of Berlin, in *Meckel's Archiv für Anatomie*, etc., 1827, p. 367, relates a case of early menstruation in a child nineteen months old. It was at birth of the natural size, but after the first month began to grow rapidly. In her ninth month she was as large as a child a year and a half old; and about this time a discharge of blood from the vagina was observed. At the end of two months a more copious discharge took place, which was accompanied with an increase in the size of the mammæ, and the appearance of hairs on the genitals. The same phenomenon recurred at fourteen, and again at eighteen months. At the time of the report the mammæ were large, and the genitals were largely developed and covered with hairs. Nothing was remarked in her mental disposition different from other children of the same age, and there was no indication of sexual desire.

3. Catals (Dr.), of Adge, attended a little girl of six years old, who was affected with a spasmodic cough, colic, headache, and epistaxis, which recurred every month. With other remedies which this condition indicated, he applied leeches to the calves of the legs. A discharge of blood from the uterus super-

vened, which was preceded by a febrile state. These phenomena, accompanied with some enlargement of the mammæ, pain in the lumbar region, and itching of the genitals, returned regularly every month, and lasted three days. (*Journal de Médecine et de Chirurgie*, par Corvisart, Leroux, et Boyer, t. xi, p. 37, as quoted by De Boismont, in his work, *On Menstruation*, pp. 33. Paris : 1842.)

4. De Boismont (M. A. Brierre), op. cit. p. 35, relates, on the authority of M. Le Beau, the case of Matilda H., who was born at New Orleans, in 1827, with the breasts and genitals as perfectly developed as in a girl of 13 or 14 years. The menses appeared regularly each month, from the age of three years. They continued three days ; and were as copious as in a perfect woman. At the age of four years, when the report was made, she was well-formed, and of handsome appearance ; the mammæ were of the size of a large orange; and the pelvis seemed as large as in a child of eight years. Her health was excellent. (From *Annal. d'Hygiène*, t. x, p. 484.)

5. Carus (Dr.), of Dresden, mentions the case of Christina Theresa, born in the mountains of Saxony, of parents of a weak constitution. She was scarcely a year old when she began to grow rapidly. At the end of the second twelvemonth the catamenia appeared, and continued to flow regularly once a month. The mammæ were firm, like those of a strong girl of 16; the body was stoutly made ; and the genital organs were covered with dark brown hair. Her intellectual functions, tone of voice, and physiognomy, were those of a child three years old. (*Allgemeine Zeitung für Chirurgie*, as quoted in *Edinburgh Monthly Journal of Medical Science*, p. 1050. 1842.)

6. Whitmore (Mr. W. H.), of Cheltenham, communicated to the *Northern Journal of Medicine* for July 1845, an account of the case of a child who menstruated regularly, at intervals of three weeks and two or three days, from a few days after birth, until the age of four years and some months, when she died. The development of the body equalled that of a girl 10 or 11 years of age. The mammæ were unusually large ; the mons veneris well covered with hair; the labia pudendi more sparingly so. In the absence of her periodical ailments, she would enter into the amusements of children of her own age; but when she was indisposed, she was exceedingly reserved, and would withdraw from all her playful occupations.

7. Lenz (Dr.), of Dantzig, relates a case in which menstruation appeared at the eighteenth month, and continued up to the age of two years, when the case was reported. The general health was unaffected in the intervals, provided the discharge took place at the regular periods. The breasts and genital organs presented no remarkable appearance, but experienced an increase in temperature and size at each menstruation. (*Caspar's Wochenschrift*, Oct. 3, 1840.)

8. Gruere (M.), of Dijon, was acquainted with the case of a child, aged three years, who had menstruated regularly since she was one year old. Her general health was good. There were no premonitory symptoms, except a slight feeling of tension in the hypogastric region. There were no external signs of puberty. (*Journal de Médecine et de Chirurgie Pratique.* Mai : 1842. Paris.)

In addition to the above cases, others have been recorded, in which a discharge of blood, often accompanied with some enlargement of the breasts, took place from the genital organs soon after birth. It seems probable, however, that the hæmorrhage might have arisen from other causes than the establishment of menstruation ; and that the enlargement of the mammæ may be due to the sympathy which exists between them and the genital organs, independent of sexual aptitude. Of this kind are, probably, among others, the cases recorded by M. Mallat in the *Gazette Médicale* for 1832; and by Dr. Camerer in the *Medicinisches Correspondenz-Blatt*, as quoted in *Gazette Médicale*, p. 248. 1815.

THE INTENTION OF HICCUP.

In "Notes from a Practitioner's Day-book," now appearing anonymously in the *Provincial Medical and Surgical Journal*, occur a variety of good remarks: such as the following, on hiccup, in the Number for November 15th, 1848.

"In the convulsive movement of hiccup, the diaphragm is depressed; the larynx is raised; and the glottis is closed. What would be the effects of these conditions? The depression of the diaphragm would tend to expand the cavity of the chest; but the glottis being closed, no air can enter the lungs. The two extremities of the œsophagus are, however, still open; and if the hiccup be strong enough, air will enter the œsophagus at both ends. If a person will make a prolonged voluntary effort of the conditions which occur in hiccup, he will find a portion of air sucked, as it were, into the œsophagus from the pharynx. Now, spasmodic hiccup is a reflex movement, excited, in general, by gaseous irritation of the stomach: under these conditions, the hiccup will suck the air of the stomach into the lower extremity of the œsophagus. This, then, is the intention of hiccup,—to pump off the air of the stomach. The movement of the hiccup sucks the gaseous contents of the stomach into the lower extremity of the œsophagus; and an inverted action of the œsophagus propels them upwards, and discharges them at the pharynx."

ON THE COLOUR OF THE HAIR.

In the *Medical Gazette* for November 17, 1848, Dr. GRIFFITH states that the appearance of pigment-cells in the hair, as seen under the microscope, is deceptive; and that this appearance results from a number of air-cavities existing in the medullary portion of the hair. The air refracts the rays of light beyond the field of the microscope, and they appear black, with generally, however, a white spot in the centre. He considers his statement proved by the following observations:—

1. If a piece be cut, transversely, from the centre of the hair,[1] and this be digested in warm water or alcohol, the hair becomes very transparent; and, by this means, all the air-cavities may be filled with the water or spirit,—nay, if the piece of hair be immersed in oil of turpentine, and warmed, the fluid may be seen under the microscope to enter the cells, and the air to escape in bubbles at the ends. All appearance of the pigment then vanishes; but traces of the cell-wall of the medulla are still faintly seen,—they not being of the same refractive power as the medium in which they are immersed.

2. If the portion of hair be removed from the water, spirit, or oil, and allowed to dry, the fluid evaporates, and the air may be seen under the microscope to enter and restore the original appearance. On preserving specimens of hair in Canada balsam, the cells are frequently filled, in parts, with the balsam, especially at the extremities.

3. If the hair be bruised in an agate mortar, it becomes flattened out, resembling a shred of membrane, the pigment appearance being completely destroyed.

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[1] That of the sable, or some other animal in which the cavities are large and distinct, is the best.

PRACTICE OF MEDICINE AND PATHOLOGY.

BELLADONNA IN INCONTINENCE OF URINE, ESPECIALLY THE NOCTURNAL INCONTINENCE OF YOUNG PERSONS, AND OTHERS.

Several interesting papers on this subject have recently appeared in the French journals. In an article in *L'Union Médicale* for October 14, 1848, M. Trousseau advocates the claims of Belladonna as a remedy for nocturnal incontinence of urine,—an affection which often baffles the skill of medical men. It has been successfully used for several years by M. Bretonneau (of Tours), but the treatment has not become generally known.

The mode of administering the belladonna is in the form of pills, composed of a centigramme (about the sixth of a grain) of the powder, and half a centigramme (a twelfth of a grain) of the extract. M. Bretonneau (who cultivates the plant for his own use) prefers the powder of the root; but in consequence of the uncertainty of its strength, M. Trousseau uses the powder of the leaves. If the child is unable to take pills, he gives the powder in doses of half a centigramme, with gum-arabic and sugar. A pill is given every night at bed-time during a week; and, if the incontinence of urine do not cease, the dose is increased to two, or even three pills. If the affection has ceased during a week, the medicine is omitted for three or four days, then again resumed for a week; and so alternately discontinued for periods of increasing length, and resumed for a week, for at least a year.

The reason which M. Troussean assigns for the long continuance of the use of this remedy, as practised by M. Bretonneau, is founded on the tendency of many chronic diseases to recur, after being apparently cured. With respect to the *modus operandi*, M. Trousseau says: "I have often considered what idea we may form of the mode of action of belladonna in the disease which occupies our attention. It has seemed probable to me that we might give the following explanation. During sleep, and by a cause of which physiologists have not yet discovered the mechanism, there is a peculiar erethism of the genital organs. Young children, youths, adults in the vigour of their age, are almost always in a state of erection during sleep. Is it unreasonable to suppose, that a state of excitement of the same kind may exist in the bladder, and produce so powerful a contraction of the muscular fibres of that organ, that the sphincter cannot oppose sufficient resistance? We then understand how belladonna, in diminishing the contractility of the bladder, puts a stop to the nocturnal incontinence of urine."

This explanation of the *modus operandi* of belladonna in Enuresis infantum seems to us very hypothetical, and certainly by no means generally applicable. We object to the explanation,—first, because the symptom is often most troublesome in weak and anæmic children, in whom we may suppose that there is less tendency to the state referred to by M. Trousseau; second, because we have found general tonic treatment, and small doses of the Tincture of Sesquichloride of Iron and Tincture of Cantharides, often produce rapid benefit; and, third, because the affection commonly undergoes a spontaneous cure after the second dentition, and almost invariably at puberty, when there often is, no doubt, an increased turgescence of the genito-urinary apparatus.

In making these remarks, we do not wish to discourage the readers of the London Journal of Medicine from trying this method of cure; for it appears by the concurrent testimony of Trousseau, Bretonneau, Morand (of Tours), and Anglada (of the same place), to be really useful; and Trousseau says (*Union Medicale*, 26th Oct. 1848, p. 306), that many years ago, Bretonneau mentioned to Guersent senior, Blache, and himself, the good effects produced by belladonna in the incontinence of urine of children; and of

frictions of belladonna over the hypogastrium, as a remedy for the vomiting of pregnant women. It appears from a discussion which has arisen as to the priority in this practice, that whoever was the first to employ it, M. Morand was the first to make it public, in a book published in 1844, entitled, *Mémoires et Observations Cliniques de Médecine et de Chirurgie.* He seems to have made this discovery accidentally. A child affected with hooping-cough came under his care. He prescribed for it, for some time, the syrup of belladonna of the French codex, when the mother of the little patient complained that her son passed much less urine, and that, contrary to his custom, he did not even moisten his linen during the night, since he had been using the syrup.

STRYCHNIA (IN PARAPLEGIA) PRODUCING HALLUCINATIONS.

The *Gazette des Hôpitaux* for October 7, 1848, contains the following account of unusual effects produced by the administration of Strychnia, in a case of Paraplegia.

A young female, 17 years of age, was admitted into the Hôtel Dieu in January last, with symptoms of incipient typhoid fever. Invagination of the intestines (successfully treated) supervened, which was followed by a severe attack of erysipelas of the face. Her convalescence was tedious. When about to leave the hospital, she was seized, about six months previous to the date of this report, without any known cause, with loss of power in the lower extremities, which increased to such an extent as to render walking impossible. This attack of paraplegia was attributed to chronic myelitis, and blisters and cauteries were applied along the spine, without any evident result. M. Vigla (under whose care the patient was), then determined to try the effect of strychnia, the good results of which, in similar cases, he had already observed. Under the influence of this remedy, a sensible improvement was soon perceived; slight tetanic twitches were observed in the limbs, and the patient has now so far improved, as to afford some grounds for expecting a perfect cure. During the progress of the case, however, several curious and unusual phenomena have been observed.

M. Vigla had gradually increased the dose of strychnia to the enormous dose of three centigrammes (about half a grain) a day, without obtaining any result of importance, when he was led to think that the pills, which had been prepared for several days, had lost their efficacy. He therefore prescribed newly made pills, and ordered the patient to take only one centigramme (about one-sixth of a grain) each day; but no effect was produced. He then ordered the same quantity to be taken night and morning. This, however, produced symptoms as violent as those which would ordinarily arise from the administration of the two doses at once. It is remarkable, that one centigramme, given in two doses, produced the same symptoms, although less strongly marked, viz., very violent twitchings, well marked trismus, congestion of the face, etc.

M. Vigla adverts to a well known fact, but to which sufficient attention is not paid in practice, viz., the difference in strength between the last dose of a prescription, and the first dose of a repetition of the same, when powerful medicines, such as strychnia, are employed. This difference is so remarkable, that a dose of the latter will often produce much greater effects than three or four times the quantity of the former. Hence, when repetitions of powerful medicines are prescribed, cautious observation of the effects is required. Probably by contact with the air, the substance loses part of its energy; because it has been observed, that pills prepared with the same quantity of strychnia from the same specimen differed in potency.

A second very remarkable circumstance in this case is the nature of the phenomena exhibited. The first attacks showed much analogy to hysteria. Those which happened more lately have lost this character, so as to resemble

the usual manifestations of strychnia, viz., slight tetanic affections. During the earlier attacks, the patient experienced hallucinations. In none of the works which profess to treat of the therapeutical or physiological effects of strychnia, have we seen hallucinations mentioned as resulting from this medicine. But when we consider the *modus operandi* of strychnia, their occurrence seems readily explained.

Strychnia acts thus :—the voluntary muscles are first affected ; but if the administration of the medicine be carried too far, and if the dose be too strong for the individual, the nervous system of organic life also feels its effects. Respiration and circulation are altered in their due relation to each other, and a true state of asphyxia supervenes. This is just what happened in the patient under observation, in whom the hallucinations were attended with congestion of the face. But hallucinations have been shewn to arise from either a sanguineous congestion, or a congestion which may be called nervous. The latter need not be spoken of here. But the influence of sanguineous congestion of the brain in producing hallucinations cannot be called in question. A young man in perfect health, employed at the Bicêtre, can at pleasure produce complete hallucinations by suppressing respiration for a moment, and making a violent effort, during which congestion of the face takes place.

In the present case we do not attempt to give any other explanation of the production of hallucinations in the patient when under the influence of strychnia. But the fact is not the less curious, especially as it has not been mentioned by any of the numerous authors who have treated of the physiological and therapeutical action of strychnia.

In connexion with the above abstract of the paper of M. Vigla, we may mention that M. Moreau (of Tours), in his work *du Hachisch, et de l'Aliénation mentale*, Paris, 1845, mentions cerebral congestion, resulting from narcotics or other causes, as one of the states favourable to the production of hallucinations. Together with other cases illustrative of the point, he refers to that of Nicolai, the bookseller of Berlin, in whom hallucinations appeared after the omission of his customary evacuations of blood, and left him when these were re-established. Were it necessary other authors might be cited to support this view.

SURGERY.

TREATMENT OF HÆMORRHOIDAL TUMOURS.

A new method of treating hæmorrhoidal tumours has lately been adopted by some surgeons of most extensive practice. The mode of treatment to which we refer, was first described as applicable to one particular form of the disease, by Dr. Houston, in the twenty-third and twenty-sixth volumes of the *Dublin Medical Journal*, March 1843, pp. 94-119, and September 1844, pp. 32-49. He there expressed a hope that the proposed plan might be found applicable to other forms of hæmorrhoidal tumour ; and this anticipation now appears likely to be fully realized. A pamphlet (being the reprint of a paper in the *Medical Gazette*) upon the subject, by Mr. Henry Lee, Assistant Surgeon to King's College Hospital, containing the details of several cases successfully treated, is now before us. The advantages of the different methods are considered by Mr. Lee.

"The removal of hæmorrhoidal tumours, either by ligature or excision," observes the author, "affords, when it can be had recourse to without danger, an easy and effectual remedy for the disease. But there are cases in which the common mode of operating is not unattended with danger; and it will not unfrequently happen that a patient wishes 'something to be done,' although he is unwilling to submit to the pain and inconvenience attending the ordinary operation. It will also occasionally happen, from some peculiarity of the constitution, either natural or acquired, that healthy, adhesive

inflammation will not take place after a wound, however trifling, of the rectum. In such cases, the inflammatory action, not being circumscribed by the healthy effusion of lymph, is not confined to its intended work of reparation; and, instead of repairing the injury that has been done, becomes itself a new and formidable disease. This termination to the operation for the removal of piles, is, unfortunately, too well known to require farther notice; but another result occasionally presents itself, which has not received the same attention from the profession, nor been so satisfactorily accounted for."

Cases are then given by Mr. Lee, in which pus was distinctly traced in the course of the hæmorrhoidal veins, and in which secondary abscesses proved fatal. From these cases, Mr. Lee concludes that it is not always safe to place a ligature upon the enlarged veins of the rectum; and that, in the way the operation is usually performed (by passing a needle, armed with a ligature, through the base of the hæmorrhoidal tumour, it must occasionally happen that one of the larger veins of the rectum is transfixed, and its sides *held apart* by the ligatures tied on the opposite sides of the tumour.

To avoid any of the inconveniences mentioned, the new method of performing the operation is proposed. *It consists in destroying certain portions of the mucous membrane of the rectum "with the strongest nitric acid that can be procured."* The great advantage of this plan of treatment is supposed to consist in the circumstance that the acid, when applied to the mucous membrane, coagulates the blood in the veins of the part, and thereby effectually seals the vessels against the entrance of any foreign matter. Another advantage attending the use of the nitric acid, is, that suppuration is not excited so soon, or to the same extent, as when a ligature is used; the portion of mucous membrane destroyed remains in contact with, and shields, the subjacent parts, till the adhesive inflammation has taken place.

The following conditions are to be observed with regard to the operation:

"1. When a considerable portion of mucous membrane is exposed, certain parts of it are to be selected, to which the application of the acid is to be confined. The effect of the acid may be regulated either by applying very small quantities at a time, or by shielding the surrounding surface with a paste made of chalk and water.

"2. Every portion of mucous membrane to which the acid extends, should be as completely deprived of vitality as possible, since the pain will necessarily be in proportion to the remaining sensibility in the parts.

"3. The degree of pain experienced in this operation, depends, in great measure, upon the part to which the nitric acid is applied. The sensibility of the thin skin around the anus is very great; and, if the acid is allowed to come in contact with it, the degree of tingling pain produced is very considerable; if care be taken, on the other hand, to confine the application of the acid to the comparatively insensible mucous membrane, a slight uneasy sensation in the lower part of the abdomen, is generally all that is complained of.

"4. It is important to remark, that the benefit to be derived from such an operation must not be expected till the small ulcers made by the caustic begin to heal; the loose folds of mucous membrane are then drawn upon, and the whole of the mucous lining is rendered more tense. Each small cicatrix, moreover, serves as a permanent point of attachment for the relaxed membrane; and consequently the inner coat (which alone descends in such cases) is retained permanently in contact with the other coats of the bowel."

STRANGULATED INGUINAL HERNIA REDUCED BY FRIGHT AND SYNCOPE.

The *Gazette des Hôpitaux*, of September 26, 1848, in an article taken from the *Journal de Montpellier*, mentions a case of strangulated inguinal Hernia reduced by fright. The patient, a man aged 35, was, it appears, intended to

be made the subject of an operation; but the terror consequent on the announcement made to him by M. Cabaret, and on the performance of part of the operation, produced an attack of syncope. During this, M. Cabaret observed that the hernial swelling was beginning to subside: this led him to apply his hand to the part, when reduction was immediately effected.

In the same journal, for October 7, some observations are made on this case, shewing that the reduction is to be attributed, not so much to the terror, as to the state of syncope consequent thereon.

There is also given, in the last-named journal, a somewhat similar case, by M. A. Pourcher, junior, Surgeon of the General Hospital of Clermont Ferrand. He was called to visit a countryman who had been the subject of inguinal hernia for several years, which had now become strangulated. After unsuccessful attempts to reduce the hernia, M. Pourcher bled him to the amount of 150 grammes (about 5¼ ounces), thus producing syncope, when the hernia was easily reduced by a sufficient amount of pressure.

TREATMENT OF BED SORES.

In the *Medical Gazette* of Nov. 17 and 24, 1848, we find the following remarks, quoted from the *Dublin Medical Press*:—"When the first blush of unhealthy inflammation makes its appearance, (which is indicated by a livid colour in the integuments), we should take care that all pressure on the parts be immediately removed. This can be done either by the patient's position being changed, or by the aid of bolsters or air-cushions; and if the case is one likely to be protracted, the hydrostatic bed of Arnott should be at once procured. The simple plan recommended by M. Purefoi (as lately described in the *Gazette Médicale*) is well worthy of the attention of the profession. He uses a cow's bladder, softened in warm water; this, being oiled and partially inflated, is placed under the part suffering from continued pressure. The effect of this support (in a case of fractured leg) exceeded his expectations. He says—'From the moment the patient experienced the change he cried out that he was in heaven, and to the end of the fracture he felt no more pain, nor was the bladder changed but once during the month this was effecting. Another patient, who had gangrene from infiltration of urine, had to rest almost entirely on the sacrum for two months, and was saved any pain or ulcerations of the part by having placed under it a bladder, prepared as above, and wrapped in a towel.' What renders this contrivance valuable is its simplicity and cheapness; it forms a very manageable substitute for the hydrostatic bed of Arnott, and will, I am convinced, add more to the comfort of our patients than a more costly article.

In addition to these preventives, others, to stimulate the surface, and excite the dormant capillaries to a more healthy action, should be diligently used. The lotion recommended by Sir B. Brodie is admirable for this purpose. It consists of two grains of bichloride of mercury to an ounce of proof spirit. These two contrivances, if used at the same time, will be found invaluable in the prevention of bed-sores. The lotion of Sir B. Brodie, by its stimulating properties, will serve to thicken the cuticle, and render it more efficient to resist injury, whilst the inflated bladder of M. Purefoi, by its softness and elasticity, will preserve an uniform pressure on the surrounding parts, and allow the free circulation of blood through the capillaries of the surface of the body."

Dr. Bernard makes the following observations:—"The constitutional treatment is of the first importance in these cases; indeed any local application to the sores will prove of little use, unless we support the strength and give tone to the nervous system. In order to understand what constitutional treatment will best suit our patient, let us inquire into the general symptoms of such cases. We find them almost invariably in a state of exhaustion and extreme emaciation,

the powers of life having sunk almost to the lowest ebb; the pulse quick and weak; the tongue furred, or morbidly clean; the skin rough and dry; the nights are passed in a sleepless state, from the pain and irritation of the sores; every motion of the patient is accompanied by the most excruciating torture; in fact it is difficult to depict the misery which an individual suffers who is subjected to so great a misfortune. During this period the appetite is often voracious; but, strange to say, the food taken seems to impart little strength to the attenuated body.

"In our treatment, therefore, we must not forget the irritative fever which exists, and the loss of nervous energy which attends this affection, to allay the one and restore the other. I look upon the exhibition of powerful sedatives as a *sine quâ non* in the treatment. Dr. Graves, in his observations on this subject (published in the thirteenth lecture of his *System of Clinical Medicine*), recommends anodynes at bed-time. The pain and nervous irritation are, however, so great in many cases, more particularly during the second stages of these sores, that the greatest benefit will be derived from their exhibition at intervals during the day as well as at night. For this purpose I have been in the habit of prescribing, with the greatest benefit, one or two grains of the muriate or acetate of morphia, combined with Murray's fluid camphor at bed-time, and smaller doses during the day, whenever the pain would urgently demand its exhibition. Sulphate of quinine, or some other preparation of bark, ought also to be administered. When constipation exists, enemata, with lukewarm water, will prove to be the best aperient, as our object is to husband as much as possible the strength of the individual. A light and nutritious diet is best suited to such cases. Brandy or wine should be given at intervals during the day, and in quantity according to the necessity of the case.

"When the sores have made some progress towards healing, change of air may be ordered; gentle exercise in the open air (if at all practicable) will be also attended with the happiest results. An hydrostatic chair might easily be constructed, like the Bath chairs in ordinary use. It is only necessary that the seat and back of the chair be rendered waterproof. This can be accomplished by lining it with Mackintosh cloth, and filling the cavity with water after the manner of the hydrostatic bed of Arnott. Whilst daily exercise in this chair will tend greatly to strengthen the constitution, and add to our patient's comfort and enjoyment, it cannot in any way protract the healing of the sores."

OBSTETRICS.

BICHLORIDE OF MERCURY IN HYPERTROPHY AND INDURATION OF THE UTERUS; WITH REMARKS ON RETROVERSION AND RETROFLEXION.

An excellent article on the above subject, by Dr. Oldham, appears in *Guy's Hospital Reports*, for October 1848.

He first treats of hypertrophy and induration of the uterus, which he considers to arise from three great causes. 1. As a primary affection, which is by far the most common. In this the uterus, remaining congested from non-recovery of its venous circulation after labour or abortion, becomes at length permanently increased in bulk and hardness in various degrees. In the early stage, there is increased sensibility, and this is considered by Dr. Oldham to be a very sure sign of a congested uterus; but, in the progress of the disease, the sensibility diminishes. This affection has been known to follow puerperal metritis, and also hysteritis arising from suppression of the menses, or the use of irritating injections into the uterine cavity. 2. The second great cause is "irritation and congestion of the ovary, in which the Graafian follicles, with their contents, are necessarily implicated." The identity of

the decidual and dysmenorrhœal membranes has been proved by Dr. Oldham, and the pathology of membranous dysmenorrhœa has thus been satisfactorily elucidated. Excitement of the ovaries, whether "from functional disorder at the menstrual periods, in the vital act of oviposition, or from sexual intercourse," induces sympathetic congestion of the uterus, with increased development of its glands. Hence the thin transparent mucous membrane of the womb is raised, either naturally into the form of decidua, or morbidly into a "rich, soft, cribriform membrane, which is cast off at the menstrual period." A continuance of the ovarian irritation, by causing a repetition of the congestion, induces at length hypertrophy with induration and displacement of the uterus; as is proved by the appearances presented by the uteri of prostitutes. Dr. Oldham dissents from the opinion of Dr. Rigby that retroflexion of the womb causes, by mechanical irritation, congestion and chronic inflammation of the ovaries. At the last menstrual crisis, where there are signs of suddenly increased activity in the ovaries, engorgement and induration of the uterus is common; and the symptoms of the affection under consideration frequently date from this period. 3. The internal sexual organs are sometimes secondarily involved in disorder of the organs of digestion and assimilation, usually in connection with excesses in diet, with habits of indolence, or sometimes with hereditary tendency. Such cases have been found accompanied by copious deposits of uric acid; and the symptoms are often relieved by the excretion of a large quantity of this matter. Dr. Oldham has often found relief to result, in cases of congestion of the uterus, from the employment of diuretics. Hæmorrhoids in these cases appear to be rather the result of portal congestion, than of mechanical pressure.

Displacement of the uterus, as a consequence of its hypertrophy and induration, may, in some rare cases, be wanting; but only when the parts supporting this organ, viz. the vagina, and the pelvic muscles and fascia, are in a firm and tonic state. Far more commonly, however—and especially in women who have borne children—the uterus sinks downwards, with generally more or less inclination backwards. The existence of such a state as a doubling of the uterus backwards on itself is greatly doubted by Dr. Oldham. He considers that the most usual degree of inclination is, that the fundus falls about as much backwards, as, in its normal position, it does forwards. The apparent doubling on itself arises from the projection of the posterior wall, as felt on an examination *per vaginam*. This projection is only apparent, the induration being equally distributed over the organ. The reduction of the uterus, when displaced, he considers capable of being generally effected with facility. He says, "It rarely happens but that such a bearing may be got upon the projecting back wall, especially if the right index finger be used, as that the womb may be redressed and returned to its natural position. At first it is, as it were, locked between the finger and the promontory of the sacrum; but after a little well-directed pressure, it soon passes beyond this part, and may be made to occupy its normal direction. If the finger be passed forward to the front of the cervix, and this part be made the fulcrum by which the womb is raised, the change of position may, in many cases, with perfect facility, be accomplished; and it has rarely happened to me to fail in raising and reducing the misdirection by these methods, either separately or in conjunction, provided the womb is moveable, and not held by false membranes or other complicating impediment." This degree of retroversion does not mechanically impede either the bladder or rectum; but if the pelvis be small, the cervix uteri may just impinge on the neck of the bladder, particularly under any new source of engorgement. The rectum in most cases escapes, being out of the mesial line. A certain amount of displacement in the healthy uterus, so far from being a disease, as imagined by Dr. Simpson and others, is believed by Dr. Oldham to be perfectly normal. The mobility of the uterus in every direction is considerable; and the only cases of retroversion of a not previously diseased uterus, which required

more than the ordinary management of prolapsus, have been caused by accident, as from being thrown forwards with a jerk on a saddle, or from a fall, or, as in a case which occurred to Dr. Oldham, from an epileptic fit.

The symptoms of this affection may be either *sympathetic* or *local*. The *sympathetic* affections assume a great variety of forms; sometimes appearing as hysteria, neuralgia, periodical headaches, affections of the sight and hearing, or mental disorder; of which latter complication the author relates an instructive case. In other cases the digestive organs are affected, and the symptoms of dyspepsia are present. Dr. Oldham has known the vomiting of pregnancy closely simulated for several weeks together. The great danger in these affections is, that the organ secondarily affected receives undue attention.

The *local* symptoms affect not only the uterus, but also the bladder and rectum. The bladder is most commonly the subject of nervous irritation, rather than of actual pressure; and the catheter is very rarely required, even when the uterus is pressed forwards against the pubes by tumours of the ovary or broad ligament. Pains in the course of the urethra, with frequent and sometimes painful micturition, are the most common bladder symptoms, and may generally be relieved by hot fomentations. Sometimes, in cases of disease of the uterus, symptoms resembling those of stone in the bladder have arisen, leading to an erroneous diagnosis. Incontinence of urine is not common, except when the anterior wall of the vagina is much relaxed. Constipation of the bowels appears rather to result from neglect of their functions than from the pressure of the uterus; and sometimes it is a part of the functional disorder of the digestive organs; and sometimes arises from the abuse of medicines. Obstruction from the pressure of the uterus is believed by Dr. Oldham rarely to occur except when the womb is fixed by false membranes; and he gives the particulars of two cases of this nature. The rectum may, however, be sympathetically irritated; and there is often pain on examining it *per vaginam*, and in defæcation. The mucus and fibrinous-like effusions, mentioned by Dr. Simpson as sometimes occurring, seem rather to arise from disorder of the intestine than from irritation consequent on the uterine displacement.

The uterine symptoms are partly functional and partly organic. The catamenial secretion is sometimes greatly increased, sometimes irregular and scanty. At times a membrane, or shreds of membrane, with coagula, are expelled; and towards the last menstrual crisis there are not uncommonly copious floodings, sometimes very exhausting, and sometimes followed by local relief. But generally the local sufferings are greatly increased at the menstrual periods, and sometimes resemble the first pains of labour or abortion. In the intervals there is more or less of the discharge peculiar to the cervix uteri, mixed with pus or thin white discharge; and sometimes there is a true uterine discharge, resembling the lochia. Sterility is a common result; but its cause is not displacement, nor the constriction of the cervix in retroflexion; for an uterine sound may be passed through the constriction, and "spermatozoa," Dr. Oldham believes, "will turn the corner of any ordinary flexion, although their vital properties may speedily be disturbed or destroyed by the deleterious influence of altered secretions."

The organic symptoms are those which mostly attract the attention of the patient. They consist of pains about the pelvis, and radiating from it; sometimes in the inguinal canals: sometimes of a bearing-down character, extending occasionally in the course of the lower limbs, and varying in intensity according to position. Sometimes there is a difficulty in walking; sometimes "biting" pains arise from the uterus towards the umbilicus; and occasionally there is throbbing in the pelvis, with pains resembling those of labour or abortion. Sexual intercourse is always painful, and especially so under any recent congestion.

The *diagnosis* of this affection from tumours and early pregnancy can only be ascertained by a vaginal examination. To effect this, Dr. Oldham recommends "placing the patient on her back, with the legs and thighs flexed and separated, and using the right index finger. In this way a very perfect exploration of the sexual organs may be made, and the left hand is ready to press over the pubes, and, by acting in concert with the examining finger, to obtain more precise information. The left side, however, or the standing position and the left finger, may be very conveniently adopted for this purpose. If the pelvis is deep, and the body of the uterus large, the right index finger, with the patient on the left side, is perhaps the most useful. It generally happens, when the uterus has been for a long time large and congested, that the vagina loses its tones, and may be felt more or less loose and relaxed, and bathed with leucorrhœal discharge. The womb itself is commonly felt low down. The cervix generally participates in the engorgement of the womb, and becomes larger and more solid. The os uteri is, as a common observation, more than usually open, and the soft feel of a granulating surface, which is so very appreciable to the touch, may often be detected over one or both labia. The cervix is placed somewhat vertically in the pelvis, or looks rather more forward ; and now and then, when its tissue is soft and yielding, and the anterior wall of the vagina in its upper part strong and firm, it may perhaps be slightly and almost imperceptibly flexed. Passing the finger from the cervix to the upper part of the vagina posteriorly, and carrying it backwards and upwards, an even round swelling, more or less large, continuous with the cervix, may be felt and defined." This swelling is capable of being raised by the finger applied to the cervix ; and where there is not much displacement, the increased weight of the womb may be felt on raising the cervix. The continuity of structure between the cervix and the tumour, and their connected mobility, form the principle on which the diagnosis is founded. The employment of the uterine sound, recommended by Dr. Simpson, although often affording aid in diagnosis, is not, in Dr. Oldham's experience, always unattended with mischief. It has, in his hands, even though carefully used, induced in one case metritis, and in another pelvic inflammation ; and there is danger of disturbing or destroying the ovum in early pregnancy, especially when there is no suspicion of such a condition. Dr. Oldham now rarely uses this instrument.

The diagnosis of fibrous tumours of the uterus is generally easy, but is much more difficult when one is developed in the centre of the posterior wall ; this, however, rarely occurs, and the same treatment would be applicable in both cases.

The diagnosis from ovarian cysts in the early stage, and tumours of the broad ligament, may generally be made out by feeling the whole of the womb before the tumour. Ovarian cysts, in the later stage, are generally by the side of or behind the womb, and their fluid contents disclose their character. If pregnancy be coincident with such tumours, its existence can scarcely be ascertained but by hearing the beats of the fœtal heart.

Dr. Simpson describes as "pelvic cellulitis," a form of cellular inflammation, which may form a hard circumscribed swelling behind the uterus. Dr. Oldham has seen four cases of this kind of inflammation, in which, however, the swelling was situated in front of the uterus.

Treatment.—There are here three indications :—"*first*, to reduce the size of the uterus ; *secondly*, to strengthen the structures which have been weakened ; and *thirdly*, to improve the general health by attention to the sympathetic affections which may have disturbed it."

To fulfil the first indication, Dr. Oldham recommends the application of six or eight leeches to the upper and back part of the vagina, repeated once or twice a week, in cases where the uterus is swollen and painful from congestion. When there is pain in the sacral or inguinal regions, he finds that

most relief is afforded by the combination of powerful sedatives, with a mild counter-irritant, in the following form :—

Tinct. Aconit. (Fleming) ʒiv.
Extract. Belladon. ʒss.
Lin. Saponis Co. ʒiss. Fiat Linimentum.

Of iodine and the iodides he considers, that their virtues have been greatly overrated, and that they are much less valuable than the Bichloride of Mercury, of which he speaks in the following terms :—

"The use of the more powerful preparations of mercury in the acute inflammatory affections of the uterus, or where the signs of a true chronic metritis are present, carried to the extent of salivation, is well understood; but the value of the milder forms of mercury, given in small doses, and continued for a length of time, in gradually absorbing and reducing the thick dense texture of a massive hypertrophied womb, is not, I believe, justly appreciated. The oxide of mercury, and Plummer's pill, are amongst the mild preparations which I allude to, but the solution of the bichloride of mercury possesses some positive peculiar advantages, in the facility with which it may be combined with other remedies, which, in my estimation, give it a decided preference. It commonly happens that the health of females labouring under chronic hypertrophy of the body, or the neck of the womb, suffers materially; and a reasonable fear might be entertained that the protracted employment of mercury would tend to increase this constitutional feebleness. But, by combining the bichloride of mercury with any of the vegetable tonics, or a chalybeate, it will be found to promote and invigorate the general health, whilst its influence in reducing the hypertrophied tissue is sustained. It is this power of combination which renders it so suitable and efficacious in diseases of the uterus; and it (viz. the solution) may be given in doses of one or two drachms, twice in the day, for three, six, or even twelve months, to delicate females without injuriously affecting them. It is a perfectly manageable remedy, and very rarely salivates, unless given in large doses, or the patient be excessively susceptible to the influence of mercury. For the last two or three years I have employed this remedy extensively, both at the hospital and in private practice, and the positive amount of good which it accomplishes, with the very trifling amount of evil, has led me to attach great value to it. The reduction of a large and indurated womb is generally slow, and the time which it takes varies extremely, in different cases. In some cases the effects are comparatively speedy, and six or eight weeks will suffice to absorb and soften a considerable hypertrophy. A recent case occurred at the hospital, in which the patient had a heavy uterus retroverted, and the angle at which the cervix jutted out from the body was so acute as to give the impression, though erroneous, of a distinct flexion, to which the attention of my clinical clerk was particularly directed. In this case the uterus was greatly reduced, and spontaneously restored to its place, after she had taken the medicine eight weeks. In others a much longer time is necessary, during which the uterus becomes more free and movable, and as it diminishes in bulk, its malposition is less and less apparent. If the bowels are torpid, a little tinct. rhei may occasionally be added."

In the treatment of hypertrophy with induration of the cervix uteri, Dr. Oldham is of opinion that much harm may be done by the over-assiduous local application of such remedies as the Vienna paste, the nitrate of mercury, actual cautery, or potassa fusa. He has observed formidable hæmorrhages after the separation of the sloughs, also metritis, with pelvic inflammation and abscess, to occur; and has found the cervix uteri contracted, or even strictured, and the upper part of the vagina the seat of adhesions and puckerings, and radiating cicatrices, resulting from the use of caustics. The use of the liquor hydrargyri bichloridi has enabled him to dispense with a considerable amount of local treatment, which, in his practice, consists mostly in the application to the hard tissue of the unguentum hydrargyri nitratis, in

the form of a vaginal suppository. But in cases where there is incipient fungoid disease, or eversion of the labia, where the inner surface becomes nodulated and projecting, like the commencement of a morbid growth, benefit is derived from potassa fusa, or the acid nitrate of mercury.

To prevent fresh attacks of congestion, attention must be paid to the functions of the bowels. Tepid or cold milk and water injections, used daily, or a very moderate use of saline aperients, as a combination of rhubarb with sulphate of potash and some aromatic, are the best remedies. Long continued exercise or standing should be avoided; and sexual intercourse ought to be indulged in with the utmost moderation.

The indication of strengthening the structures below the uterus is in a great measure fulfilled by the use of cold hip-baths, or baths with bay-salt and alum. Dr. Oldham has long been in the habit of using suppositories, consisting of gr. x. or gr. xij of tannin made up with honey; but he states that they are liable to stick to the vagina, and are difficult to be cleared away. The injection of fluid astringents is serviceable, if the patient know how to employ them effectually. Vaginal pessaries are liable to some objections, from their tendency to excite irritation in the parts with which they are in contact, and even to become imbedded, or to cause ulceration of the vagina, and even perforate the bladder or rectum.

The best form of mechanical support, in Dr. Oldham's experience, is "a firm, well-fitting, elastic abdominal belt, to which is attached an under perineal pad;" and the disagreeable feeling of heat from the pad is easily overcome, and is entirely counterbalanced by the comfort and safety which it affords. Dr. Simpson's uterine supporter has produced so much irritation when used by Dr. Oldham, that he says "he dare not use" it.

The last indication of treatment depends on the varied nature of the sympathetic symptoms, and their demanding attention to general therapeutic principles. Trisnitrate of bismuth, with a grain or two of extract of poppy, is very useful in allaying gastric irritation. Change of air is of very great service; and the diet should be nutritious, but not directly stimulant.

TREATMENT OF VOMITING IN PREGNANCY RECOMMENDED BY DR. STOLTZ OF STRASBURG.

Dr. Schnellbach, in his Thesis (quoted in the *Bulletin Général de Thérapeutique*, tome xxxix, p. 361, 1848), gives the following *résumé* of the treatment which Dr. Stoltz recommends in this troublesome and distressing affection:—

"The first thing to be done when we have to treat a pregnant woman, affected with obstinate vomiting, is to examine carefully whether the affection be the result of simple pregnancy, or whether there be any complications. In the latter case, the first indication is to treat the complications. Thus, if there be signs of plethora, venesection must be practised, without any anxiety as to the term to which pregnancy has advanced. We may also have recourse to the application of leeches to the hypogastrium, to the upper part of the thighs, or to the perineum, in cases of uterine congestion or inflammation, indicated by a feeling of weight in the pelvis, and pains in the hypogastric region. If there be a feeling of uneasiness in the gastric region, we adopt a mild antiphlogistic treatment, apply some leeches to the epigastrium, give cooling drinks, and administer laxative enemata,—a remedy which is, by far, preferable to evacuant medicines. After having thus simplified the problem by removing its complex elements, if the vomiting continue, the cause must be sought for in certain general or particular conditions which are entirely peculiar to pregnancy: such as the general excitability of the nervous system, which is reduced by antispasmodics, or the morbid excitability of the stomach, the remedies for which are cold or iced drinks in

small quantities, the application of an opiate plaister over the stomach, and the internal administration of oxide of zinc and trisnitrate of bismuth. In some women, instead of a morbid sensibility of the stomach, the mucous membrane appears to be deficient in tone. It is then that the greatest benefit is obtained from the use of mild stomachics: such as aromatic infusions, distilled waters, infusion of calumba, alcoholic liquors, excitant and antispasmodic draughts; and if this nervous excitability be complicated with a more or less apparent state of chlorosis, tonics and preparations of iron are administered, and recourse may be had to the application of belladonna to the hypogastric region, or a continuance in the horizontal position. There are still, though fortunately rare, some cases of vomiting, which the best-directed efforts fail in curing. In such cases, if the woman is reduced to a state of extreme emaciation; if hectic fever has manifested itself, if every kind of food is rejected, if marasmus makes continual progress, if the patient is threatened with death from inanition, at an earlier or later period,—is it not evident that abortion ought to be provoked? since it has been observed that these symptoms have then disappeared, where the vomiting was purely sympathetic with pregnancy, or with a morbid state which it induced or maintained.

"With the object of giving clearness to this part of the treatment of vomiting during pregnancy, the author has collected a great number of facts, already reported, or which have been communicated to him by Dr. Stoltz. He has arranged them under three categories: the first includes eleven cases of vomiting, terminating fatally; in six, abortion had not been proposed; in three others, abortion had been proposed, but not practised, in consequence of a difference of opinion; finally, in two others, abortion had been unsuccessfully tried,—but in one case the operation failed in consequence of an obstacle.

"The second category comprehends cases of severe vomiting, cured by spontaneous abortion or premature labour. Cases of this kind are very numerous. Finally, the third category includes the cases of severe vomiting cured by artificial abortion. In this category are reckoned three well-observed cases of premature labour, and many others simply mentioned; finally, a case of abortion,—properly so called,—and others, which are mentioned very briefly by authors. One case alone (and that of doubtful authority) is known in which severe vomitings have permitted pregnancy to arrive at its full term."

MATERIA MEDICA AND PHARMACY.

BARK OF THE ADANSONIA DIGITATA, AND ITS ALKALOID ADANSONINE, SUBSTITUTES FOR CINCHONA BARK AND QUININE.

The Adansonia Digitata[1] is a native of Senegal, but it is found in various parts of the East and West Indies. It is not a tall tree, but the trunk is twenty or thirty feet in diameter. The fruit (called Monkey's bread-fruit) makes an agreeable sub-acid beverage with sugar; or it may be taken as an effervescent draught, with the addition of a few grains of sesquicarbonate of soda. In the West Indies, the natives employ the monkey's bread-fruit as a remedy in catarrhal affections, and as a common article of food.

Dr. Duchassaing, of Guadaloupe, in a paper published in the *Compte-Rendu des Séances de l'Academie des Sciences*, for February 1848, recommends the bark as a valuable remedy in remittent and intermittent fevers. It possesses the advantages of economy, and absence of taste and smell, over

[1] This tree takes its name from Adanson, who long ago employed it in the remittents of Senegal.

the cinchona. He says that it produces no disagreeable effects upon the nervous system, assists digestion, and often cures an ague when quinine has failed. It has a tendency to lower the pulse, and cause diaphoresis. Dr. Duchassaing employs it in the form of decoction, made by boiling half an ounce of the bark in a pint of water, until reduced to two-thirds. A reddish-coloured transparent decoction is thus obtained, with an odour somewhat resembling decoction of cinchona bark. From the large quantity of mucilage which it contains, it does not keep long; but by adding a small quantity of sulphuric acid or spirit, the tendency to decomposition is, to a certain extent, obviated, in consequence of the mucilage being precipitated.

Mr. Robert Hepburn, a native of Jamaica, has shewn, in the *Cornwall Courier* (a paper published in the island), that the bark of the Adansonia Digitata contains an alkaloid, differing in its chemical properties from quinine. The chemical properties of quinine, as compared with those of Adansonine, or Baobine, are thus stated by Mr. Hepburn:—

Quinine.	*Adansonine or Baobine.*
1. Sparingly soluble in water; soluble in alcohol and ether.	1. Insoluble in water; sparingly soluble in alcohol and ether.
2. Bitter to the taste.	2. Tasteless.
3. May be obtained in crystals.	3. Uncrystallizable.

We quote the following remarks of Mr. Hepburn:—"Adansonine differs from all the other alkaloids, only resembling stramonine, an alkaloid of the datura stramonium, or thorn-apple, in being tasteless, inodorous, and insoluble in water, while differing from it in being sparingly soluble in alcohol and ether. Adansonine unites with hydrochloric and sulphuric acids, in forming salts, which, unlike their base, are crystallizable and soluble in water, and contain an excess of their respective acids. I first obtained this substance in the form of a hydrochlorate, by boiling the bark in one part of hydrochloric acid with three parts of water. This solution contains an excess of acid, for even after long-continued boiling the liquor is acid to the taste. In order to separate the alkaloid from the acid, it must be decomposed by a solution of carbonate of potash added gradually to the liquor. When a sufficiency of this carbonate has been added, the liquor ceases to effervesce, becomes very alkaline to the taste, and deposits a whitish flocculent precipitate. This precipitate must be purified by repeated washing and drying. The hydrochlorate crystallizes in needles. This alkaloid unites also with sulphuric acid, forming a sulphate, which is soluble in an excess of its acid. When this solution is exposed to the solar rays, and allowed to evaporate spontaneously, the sulphate is deposited in beautiful feathery crystals. Both these salts of Adansonine are decomposed by potash and ammonia. In these respects, it resembles quinine very much; from which, however, it is distinguished, by its salts not giving a precipitate with the infusion of galls."

SOLUTION OF CAMPHOR IN CHLOROFORM—A CONVENIENT FORMULA.

A sufficiently potent solution of camphor has long been a desideratum. This has been at last supplied by Messrs. T. and H. Smith, of Edinburgh. In the *Edinburgh Monthly Journal* for November 1848, they give the following valuable formula:—

"Three drachms of solid camphor are dissolved in one fluid-drachm of chloroform. This is, perhaps, one of the most remarkable cases of solution which the whole range of chemistry presents to us. The solution is most *rapid* and *complete*, and the bulk of the liquid is now increased from one to fully four fluid-drachms. This solution, rubbed up with the *yelk* of one fresh egg, may be formed into an extremely elegant emulsion by the addition of water, without the slightest separation of the camphor or chloroform; in fact, no separation of any kind takes place. If to the proportions given above

as much water be added as to make a four-ounce mixture, each teaspoonful of the mixture, when formed, will contain about five and a half grains of camphor, and about two minims of chloroform. The capability of the formula being varied, so that either the camphor or the chloroform may constitute the predominating ingredient, must be quite obvious. This mixture can be administered in any ordinary vehicle, such as water, without the occurrence of any separation; indeed the mixture is as readily and completely effected as cream with tea or coffee. We have tried the effect of several medicinal substances on the mixture. With none of them has any separation been caused.

"A weak saline solution, composed of common salt, phosphate of soda, and an alkaline carbonate, mixed readily, as well as a solution of muriate of morphia and sulphate of zinc. With the volatile alkali and acid liquids—such as a weak solution of acetic and muriatic acids—the mixture seems to become more intimate and stable. The mixture with ammonia has stood since its preparation—now fully a week—without any separation. With water alone, however, the chloroform solution of camphor separates in a few days, but they readily unite again when slightly agitated. The solution of camphor in chloroform, although insoluble in water alone, appears in this mixture to be in as complete a state of mixture as the butter in milk when newly drawn from the cow."

TOXICOLOGY.

USE OF ARSENIC IN AGRICULTURE.—POISONING BY ARSENIC, AND SYMPTOMS OF CHOLERA—THE POSSIBLE EFFECT OF THE GAME LAWS; IN A LETTER TO THE EDITOR OF THE LANCET. BY W. H. FULLER, ESQ., M.B.

* * * For some months past, in certain parts of Hampshire, partridges have been found dead in the fields, presenting a very remarkable appearance. Instead of lying prostrate on their side, as is usually the case with dead birds, they have been found sitting with their heads erect and their eyes open, presenting all the semblance of life. This peculiarity, which for some time had attracted considerable attention among sportsmen in the neighbourhood, led to no practical result until about ten days ago, when a covey of ten birds having been found nestled together in this condition, two of the birds, together with the seeds taken from the crops of the remaining eight, were sent up to London for examination. I was requested to undertake the investigation, and the result of my experiments I will now briefly detail. * * *

Having ascertained the presence of arsenic in the food of the partridges, I proceeded to examine the birds themselves. They were plump and in good condition; but the œsophagus was in both cases highly inflamed throughout. The intestines were not inflamed, and presented no trace of ulceration, but they were remarkably empty and clean, almost as if they had been washed with water. May not this have been the result of diarrhœa?

I now, at the suggestion of my friend, Mr. Stone, proceeded to ascertain whether the flesh of birds so poisoned might not itself prove poisonous when eaten, and with this view I carefully cut the flesh off the breast and leg of one of the birds, and gave it, together with the liver, to a fine healthy cat. She ate it with avidity; but in about half an hour she began to vomit, and vomited almost incessantly for nearly twelve hours, during the whole of which time she evidently suffered excessive pain. After this, nothing would induce her to eat any more partridge. I kept her without food for twenty-four hours, but in vain; she resolutely refused to touch an atom more of the bird. This being the case, I gave her some beef and some milk, which she eagerly swallowed, proving, beyond a doubt, that her instinct, and not her want of appetite, induced her to forego the dainty meal which had just been offered her.

I now felt satisfied, from my observation of the symptoms induced in the cat, borne out, as they were, by many facts we are acquainted with respecting the action of poisons, that the arsenic which the partridges had swallowed had been absorbed in sufficient quantity into the system to render the flesh of the birds poisonous, and to induce poisonous effects in any one partaking of it. However, I was anxious to leave nothing to hypothesis, and as the cat had so soon rejected by vomiting the greater part of the bird she had eaten, and pertinaciously refused to repeat the experiment by again partaking of the poisoned food, I was obliged to have recourse to chemical analysis, with the view of ascertaining with certainty the existence or non-existence of arsenic in the flesh itself. I therefore cut the flesh off one side of the breast of the other partridge, and after about an hour's boiling, I obtained by Reinsch's process, a thin incrustation of metallic arsenic, thus demonstrating beyond question, what the previous experiments had left little room for doubting. I was now anxious to ascertain the source of the poison, and a very little inquiry served to satisfy me on this point. I will not stop to go into many details which, though in themselves exceedingly interesting, have no direct bearing upon the question at issue. I will simply mention the leading facts, viz.: that in Hampshire, Lincolnshire, and many other parts of the country, the farmers are now in the habit of steeping their wheat in a strong solution of arsenic previous to sowing it, with the view of preventing the ravages of the wire-worm on the seed, and of the smut on the plant when grown; that this process is found to be eminently successful, and is therefore daily becoming more and more generally adopted; that even now, many hundreds weight of arsenic are yearly sold to agriculturists for this express purpose; that, although the seed is poisonous when sown, its fruit is in no degree affected by the poison; that, wherever this plan has been extensively carried out,[1] pheasants and partridges have been poisoned by eating the seed, and the partridges have been almost universally found sitting in the position I have already described; and lastly, that the men employed in sowing the poisonous seed, not unfrequently present the earlier symptoms which occur in the milder cases of poisoning by arsenic. This last fact I give on the authority of Dr. Heale, who, up to the last two or three years, practised at Staines, and has repeatedly had men under his care, suffering from symptoms due to this cause.

Now the facts just enumerated, suggest several most important points for consideration. It is notorious that many of the dealers in game are supplied through the agency of poachers and others, who have a direct pecuniary interest in supplying them with the largest possible number of birds. It is certain, moreover, that if men of this sort were to find a covey of partridges in a field, dead, but fresh, and in good condition, they would not hesitate to send them, with the remainder of their booty, to the poulterer, who would as certainly, without suspicion, sell them to his customers. And after the experiments above detailed, there can be no reasonable grounds for doubting that these birds, when eaten, would produce disagreeable and injurious—not to say, poisonous—effects on those who partake of them.

First. It is obvious, therefore, that in all cases of supposed cholera, or of suspicious bellyache, occurring at this season of the year, we shall do well to make particular inquiry as to whether our patient has recently partaken of pheasants or partridges purchased at a poulterer's. And it is further mani-

[1] In a review on Mr. Taylor's work on Poisons, in the last October volume of the British and Foreign Medico-Chirurgical Review, the reviewer states, that "in the spring of 1846, a great number of pheasants having been found dead in their preserve, their crops were removed and sent to us for analysis, and with them some young wheat, about six inches high, which had been grown from poisoned corn, and on which it was suspected that the birds had fed. The earth about the roots of the plants yielded distinct traces of arsenic, but the leaves were perfectly free from it."

fest that, in all cases of poisoning, or suspected poisoning, by arsenic, the fact of the persons having lately eaten of partridges and pheasants, must form an important element in the inquiry, and must tend to cast a suspicion on the evidence adduced to prove a criminal intent in the administration of the poison.

Second. If it should prove, on further inquiry, that the practice of steeping seed-wheat in arsenic is, even indirectly, productive of injurious effects on our population, it may become, in these days of sanitary reform, a matter for the anxious consideration of the Legislature, whether they should not adopt some measures to prevent the continuance of such a custom.

Third. As, in the event of a practice so destructive of game becoming universal, pheasants and partridges, in their wild state at least, must, at no distant day, become extinct in this country, it is a question whether landlords may not henceforth be induced to insert a clause in their leases, prohibiting the use of arsenic on their farms; while, on the other hand, it may be a question with those who are already weary of the protracted debates on the game laws, whether they should not allow them to die a natural death, by the gradual but inevitable destruction of the game it is the object of these laws to preserve.

SEEDS OF THE HELIANTHUS, OR SUN-FLOWER, SHEWN TO BE OCCASIONALLY POISONOUS.

Mr. Norris F. Davey has published the following case in the *London Medical Gazette* for 10th November, 1848:—

"4 p.m. Oct. 8th, 1848.—I was called to attend Eliza Hammond, æt. 23, an inmate of the Romford Union-House, unmarried, with an infant a few months old. I found her sitting on her bed, with an anxious countenance; eyes suffused; face deeply flushed; skin generally of a scarlet redness, and very hot; pulse 110, full, soft, and compressible; breathing rather difficult, and hurried; tongue and fauces very red, and inclined to dryness; voice hoarse; pupils natural; mind perfectly clear. She complained of a severe burning sensation in the fauces, œsophagus, and epigastrium; tingling of the skin; nausea; head-ache; thirst; stiffness and dryness of the throat, and difficulty in articulating. She had vomited freely about half an hour before my visit; the ejected matters were not preserved. The bowels had acted once in the morning.

"I found that at 10 a.m. (being then in perfect health) she had eaten a quantity of sun-flower seeds; while eating them, she remarked that they had an unusually hot taste, and immediately afterwards felt a sensation of glowing in the throat and stomach. Shortly after this, she became very sick and ill, and her symptoms increased in severity until the vomiting occurred; she then felt rather better, and continued to amend up to the time of my visit. She could not say how many seeds she had eaten; but she thought more than a hundred.

"As she had vomited freely, I gave her a brisk aperient, and mucilaginous drinks, followed by salines; the next day she felt pretty well, and complained only of a slight head-ache, and some stiffness of the throat. The child continued well throughout, and the secretion of milk was uninfluenced.

"Although the seeds of the sun-flower are so commonly eaten with impunity, the foregoing case shews that serious results may occasionally ensue; and it is probable that many similar cases have occurred, but that, from the generally-assumed harmlessness of the seeds, they have not been recognized as the cause of the symptoms. Hammond had repeatedly eaten them without ill-effect, and on this occasion observed a decided difference in taste and pungency; whence we must conclude that, although usually absent, or in very small quantity, an acrid poison may be, and is occasionally, developed in the seeds of the sun-flower."

REPORTS OF SOCIETIES AND ACADEMIES.

ROYAL MEDICO-CHIRURGICAL SOCIETY.

First Meeting of Session 1848-9. Tuesday 14th November, 1848.
J. M. Arnott, Esq., F.R.S., President.

On the Employment of Nitrate of Potash in Acute Rheumatism; with Suggestions for the use of Saline Solutions as External Applications in Local Rheumatic Inflammations. By W. R. Basham, M.D., Physician to the Westminster Hospital.

Dr. Basham takes, as the basis of his essay, the following facts: 1. That in acute rheumatism, as in other inflammatory diseases, the most important changes in the composition of the blood are, the increased quantity of fibrine, and the deficiency of the saline ingredients; 2. That where this state of the blood exists, there is a special disposition to the deposit of fibrine, and the formation of adventitious tissues; whilst in diseases in which the fibrine is deficient and the salts in excess, in the blood, it does not coagulate, and hæmorrhages of a passive kind occur; and 3. That though, as his own experiments have satisfied him, saline solutions have not the power of dissolving coagulated fibrine, yet certain salts in solution, mixed with the blood at the moment of its escape from the body, possess the property of suspending or retarding the separation of the fibrine. He next inquires whether any therapeutic principle can be deduced from these facts; and proposes the question, whether saline remedies, largely employed, may not suppress the tendency to the fibrinous exudation, or retard it, so as to give time for other remedies to diminish the amount of fibrine present in the blood. With reference to this question, he alludes to the observations of several physicians on the use of nitrate of potash in acute rheumatism, and details his own experience of its effects. He gives one, two, or three ounces of nitrate of potash, diluted with two quarts of water, in twenty-four hours. In the majority of cases, no obvious effect is produced in the force or frequency of the pulse, on the digestive functions, or on the quantity of urine exuded. But the urine always acquires a high specific gravity, and nitrate of potash may be detected in it. The swelling, heat, and pain of the joints affected with rheumatism are relieved in a most marked degree, even when no other remedies are employed at the same time. There is a certain amount of exemption from cardiac complication; and cardiac inflammation, when present, is more amenable to remedies. In a case which the author relates, he examined the blood of the patient before the commencement of the saline treatment, and again after this treatment had been continued for some days. In the first instance it was buffed and cupped, the fibrine was in excess, and the salts were deficient. After the administration of the nitre there was no buffy coat, the proportion of fibrine had diminished, and that of the salts greatly increased. The author presumes, therefore, that while the internal use of the nitrate of potash assisted to restore the proportion of the saline ingredients, the other treatment employed tended to lessen the excess of fibrine. Some remarks of Mr. Gulliver have led the author to investigate the effects of the external application of saline matters to parts affected with rheumatism. His experiments have been principally made with nitrate of potash. In chronic rheumatism he has used the iodide of potassium, and in gout the bibasic phosphate of soda. He applies the saline substances by means of spongio-piline, a portion of which, large enough to envelope the part affected, having been moistened in water, the salt employed is freely sprinkled in powder on the spongy surface; it is then applied to the part,

and secured with a roller. In numberless instances, by this simple treatment, he has witnessed the most palpable and instant relief to the local inflammation. Constitutional remedies were employed at the same time; but the relief was proved to be due to the saline applications, by the fact that, where several joints were affected, only those were relieved to which the salt was applied. At the end of the paper, the author gives an abstract of seventy-nine cases of acute rheumatism, shewing the results of treatment, and other particulars.

Dr. Henry Bennet had witnessed a similar mode of treatment to that practised by Dr. Basham, at Paris, in 1837, and subsequently. In that year, M. Gendrin had instituted a series of experiments with the nitrate of potash, in acute rheumatism. He gave it in doses varying from six to twelve drachms. He had seen this treatment adopted in about as many cases as were recorded in the paper before them, and with the same result. It was found to be a safe, as well as energetic, remedy. In the experiments of M. Gendrin, no other medicine was given,—not even aperients. The result of the treatment was generally successful; but in every tenth or twelfth case it was found necessary to resort to the old remedies, bleeding, calomel and opium, etc. It was noticed also, that patients treated with nitrate of potash were unusually free from cardiac disease; more so, indeed, than under any other kind of treatment. Another notable circumstance connected with this mode of treatment was, that patients recovered more rapidly under its use. This was most important, particularly in Paris, where bleeding was often resorted to, to a considerable extent, and patients were consequently kept months, and even years, in a weakly condition. He had never seen any injurious effects arise from the large doses given; this, no doubt, was owing to the large quantity of fluid in which the medicine was dissolved. In all cases of poisoning by this agent, recorded in works on medical jurisprudence, the quantity of fluid used was small. He (Dr. Bennet) had recorded some cases treated with this medicine, in the *Lancet* of 1845. The plan pursued was perfectly original, and the originality was due to Dr. Basham. In slight rheumatic cases, with little febrile action, this treatment was most beneficial, the patients recovering in four or five days.

Dr. C. J. B. Williams asked the number of days that were required to give relief to the acute symptoms in rheumatic fever.

Dr. Basham said, that in only two cases had he treated the disease by nitrate of potash alone. The acute inflammatory symptoms usually gave way on the third or fourth day: and it was important to state, that in no one case treated by the nitrate of potash had there been any relapse. This was a strong recommendation in favour of this treatment, when we recollected how frequently relapses occurred when the other modes of treatment were employed. In the first instance, he had given as much as four ounces of the salt in twenty-four hours; but he had now reduced the quantity to one or two ounces in that period. A great quantity of the salt was eliminated by the urine; the quantity of which was not much increased; but its specific gravity was a great deal higher, averaging between 1030 and 1040. This increase in the specific gravity he considered to be due to the potash.

Dr. C. J. B. Williams did not think this increase in the specific gravity of the urine was due to the nitrate of potash; but regarded it as the result of the elimination of urea and the salts of lithic acid from the system. This, or an increase in the quantity of the urine, was a circumstance which obtained when rheumatism was treated by other remedies. The result, in his own experience, of another treatment,—that by salines and colchicum, with bloodletting when necessary,—was that convalescence usually took place from the third to the sixth day, and a cure was effected in from two to three weeks, according to the severity of the case. Feeling doubtful at one time as to the relative effect of salines and colchicum on the disease, he determined to treat some cases entirely by the former; and with this view

gave, in sub-acute rheumatism, the carbonate and tartrate of soda freely every two or three hours, until four or five drachms were given in the day. These remedies mitigated the pain and fever, but the rheumatism continued, although the salines were unremittingly persevered in for ten or twelve days. Colchicum was then added, and in three days the pain was gone, the specific gravity of the urine becoming at the same time much higher, from the presence of urea and the lithates. It was remarkable, too, that the urine often retained its acid property, even in cases where the perspiration was acid.

Dr. Basham had expressly stated in his paper that he regarded, and had employed, the nitrate of potash only as an adjunctive remedy. He resorted to other remedies, among which might be mentioned colchicum. He agreed with Dr. Williams as to the cause of the increase of the specific gravity in urine as high as 1028 or 1030; but the excess beyond these figures he believed to depend on the nitrate of potash.

On the Advantages of Solutions of Caoutchouc and Gutta Percha in Protecting the Skin against the Contagion of Animal Poisons. By William Acton, Esq.

The author has arrived at the following conclusions as to the protective power of solutions of gun-cotton, gutta percha, and caoutchouc:—1. That the solution of gun-cotton, when dry, corrugates the skin too much to be available for the purposes required. If the skin be stretched, the thin film of the dried solution ruptures in various places, and the surface of the healthy cuticle beneath is chapped, and becomes excessively painful, particularly if ether be employed to remove the hardened pellicle. 2. That gutta percha alone is devoid of elasticity and sufficient adhesive quality, while the solution of caoutchouc wants body and is too sticky; but that— 3. The compound solution of caoutchouc and gutta percha possesses the requisite qualities to fulfil the purposes required.

It is prepared by adding a drachm of gutta percha, and ten grains of caoutchouc, each to a separate ounce of benzole (the volatile principle of coal naphtha), and mixing them, when dissolved by a gentle heat, in equal proportions. When the surface surrounding a chancre is painted with this solution, the acrid secretion has no effect on it, and warm or cold water may be used with impunity. It may be also advantageously used for the purpose of protecting the skin from the contact of acrid secretions or animal poisons. Mr. Quekett has found that a dried film of the compound is perfectly elastic and free from perforations, though in many places less than the 1-500th of an inch in thickness.

Second Meeting.—Tuesday, Nov. 28, 1848.

J. M. Arnott, Esq., F.R.S., President.

Causes of the Endemic Puerperal Fever of Vienna. By C. H. F. Routh, M.D. London. (Communicated by Dr. Murphy.)

There are three Lying-in-departments in the General Hospital of Vienna. To one strangers are not admitted. Of the two others, to which only the author's remarks refer, one is destined for the instruction of medical men and midwives, the other for the instruction of midwives only. The average number of deliveries in each department is from 250 to 300 per month. The mortality in the division for midwives and medical men has generally been thirty per month, and has occasionally been seventy. In the division for midwives only, the number of deaths has generally been from seven to nine per month. The clinical instruction is conducted on precisely the same general plan in the two departments; but the medical men receive also practical instruction in a private course, in which the operations are performed on the dead body of some female, while the midwives receive this

instruction by means of the leather phantom. The frightful mortality in the division to which medical men are admitted, became the subject of a government inquiry, and the number of students in attendance was reduced from forty to about thirty. The mortality, however, remained the same as before. On inquiry, it was found that in other countries, where there were two divisions in the lying-in-hospitals, one for midwives, and another for medical men, the mortality was far greater in the latter. The author adopts the explanation proposed by Dr. Semelweiss, the assistant-physician of that division of the Vienna Lying-in-Hospital in which the great mortality has occurred —namely, that the mortality from puerperal fever there arose from the "uncleanliness of medical men and students in attendance," their hands being impregnated with cadaveric matter through dissecting, making autopsies, and performing obstetric operations on dead bodies. Dr. Semelweiss recommended all students attending his division of the lying-in-hospital not to handle dead matter, or, if they did so, forbad them to make any examinations of the patients till the following day. He directed every student to wash his hands in a solution of chlorine prior to, and after, every examination of the living subject. The result was, that the deaths were reduced from thirty per month, to seven per month, the usual average mortality of the division for midwives only.

Dr. Murphy said that the novel point in the paper was the fact established by the author, that puerperal fever was propagated by the students, who had been recently examining dead bodies. In his own experience in the Dublin Lying-in-Hospital, he had found attention to ventilation, and cleanliness the best preventive of the disease. When Dr. Collins was appointed master of that institution, the puerperal fever was at its height. He had tried every means to eradicate it. The perseverance in improved ventilation, etc, succeeded; for the last four years there had been no case of puerperal fever. Dr M. referred to the case of a German student, who was constantly at post-mortem examinations. Puerperal fever seemed to attend him wherever he went; but on his giving up his pursuit after dead bodies this ceased.

The President inquired if it accorded with the experience of the accoucheurs present, that pupils from the dissecting-room gave puerperal fever to their lying-in patients more frequently than midwives? This appeal of the President was not responded to, and

Dr. Gregory asked another question—Why puerperal fever had, within the last four or six weeks, been so prevalent in lying-in hospitals?

Dr. Copland said, that the facts stated in the paper were so convincing, that we could scarcely doubt their accuracy. The mode of infection mentioned by the author was, however, only one of the modes in which puerperal fever was propagated. It was known that the disease might be communicated also by the hands of the accoucheur who had attended a case of the disease. The paper had proved that it might be communicated by the hands used in post-mortem examinations. But the disease frequently broke out without any chance of its origin being traced to this cause. In most cases, in the lying-in hospitals, the matrons, or midwives, who did not examine bodies, delivered the patients. He thought that something was due to the frequency with which examinations during labour were made, and also to the atmosphere of lying-in establishments This was impure, from the effluvia resulting from the lochial and other discharges of the women. In this way the disease was propagated by napkins, &c.

Mr. Moore could testify to the accuracy of the author's description of the cleanliness of the hospitals in Vienna. The amount of post-mortem examination going on in that establishment was remarkable. He had seen as many as fifteen bodies lying for examination in a morning. The students and professors had their hands immersed in these for hours together. The position of Vienna was such as not to surprise any one that puerperal and typhus fevers were prevalent there.

Mr. Marshall said, that he had been examining a body. He was called from thence to a labour, but took the precaution of changing all his clothes, and washing his hands in solution of chloride of lime; his patient, however, was seized with puerperal fever, and the next following three suffered from the same malady.

MINUTE ANATOMY OF THE LUNG OF THE BIRD, CONSIDERED CHIEFLY IN RELATION TO THE STRUCTURES WITH WHICH THE AIR IS IN CONTACT WHILST TRAVERSING THE ULTIMATE SUBDIVISIONS OF THE AIR-PASSAGES. By G. RAINEY, Esq., M.R.C.S., Demonstrator of Anatomy at St. Thomas's Hospital. (Communicated by Dr. TODD.)

The trachea in birds, in addition to the structures composing this part in the mammal, is almost entirely surrounded by a layer of muscular fibres of the striped variety. The calibre of the bronchial tubes is more uniform than in mammals, and the inter-cellular passages, which are very minute, are given off at right angles with their axis, instead of being continued from their extremities. These peculiarities, the author observes, are rendered necessary in birds by the additional function which these tubes have to perform in this class of animals. The bronchial tubes in birds are lined by a distinct fibrous membrane, which, at those parts of the tube from which the inter-cellular passages proceed, is distinctly perforated, so that the bronchial membrane, as in the human lung, does not extend farther than the bronchial tubes. The inter-cellular passages, which at their commencement are but small, soon lose themselves among the air-cells. The air-cells surround the bronchial tubes, and fill up the interval between them and the spaces which separate the lobules, the inter-lobular fissures appearing in the uninjected lung to be merely the cellular walls of these tubes. The author uses the term *air-cells*, because physiologically they may be considered as such. The capillaries (he goes on to notice) form, by their frequent anastomoses upon different planes, a kind of dense solid plexus, with no other separations between the vessels for the reception of the inspired air, than the open areolæ or meshes of the plexus, which communicate freely through the whole of a lobule.

The author next observes that the bronchial tubes have a very distinct lining of ciliated epithelium, which ceases where the bronchial membrane gives off the inter-cellular passages. To render this fact more striking, he gives the measurement of epithelial cells, which were taken from the bronchial tubes of a pigeon, which are stated to be 1-800th of an inch in length, and about 1-3300th of an inch in breadth, showing that the ultimate subdivisions of the air-passages in the bird are several times smaller than the individual particles of epithelium which are by some physiologists considered to line them. Although, he observes, the ultimate subdivisions of the air-passages in birds are so extremely minute, yet it is in them we see a respiratory organ of the greatest efficiency, and in its greatest state of simplicity, the inspired air being admitted directly in contact with the pulmonary capillaries, and all around their entire circumference. The author then remarks that, however the organs of respiration in the different classes of animals may differ in their anatomical characters, the principle upon which they act must be the same; and therefore, that if the simple exposure of the blood in the capillaries to the action of the air be all that is required for the aeration of blood in the bird, in which this function is performed with the greatest activity, it ought to be sufficient in those animals in which it is performed with less energy. The correctness of this inference is then shown by a comparison of the structure of the lungs of several mammals with those of the bird, by which it is apparent that a gradually-increasing resemblance in structure to the lung of the bird exists in different animals, in proportion as the activity of their respiration approaches to that of birds. This resemblance is marked by the minuteness of the air-cells, the absence of all regularity in their arrangement, and the partial deficiency of the membrane which con-

nects the pulmonary capillaries. The air-cells in many mammals are much smaller than the individual particles of ciliated epithelium lining their bronchial tubes. In confirmation of this fact, the author refers to the lung of the kangaroo, hare, rabbit, dog, rat, and mouse. From these facts and considerations, the author concludes that the ciliated epithelium can have nothing to do with the immediate function of the lung in the process of aeration of the blood, and that its office is probably only mechanical, the function of aeration requiring for its performance only the pulmonary capillaries, with the blood within them as they exist in the simple, though most perfect and efficient respiratory apparatus of the bird.

Case of Cysticercus Cellulosæ in the Anterior Chamber of the Human Eye. By Wm. Mackenzie, M.D., Glasgow, Surgeon-Oculist in Ordinary, in Scotland, to the Queen.

E. G——, aged sixteen, applied at the Glasgow Eye Infirmary in September 1848, on account of obscurity of vision in the left eye. On examination, a spherical body, about one-eighth of an inch in diameter, was discovered lying close in front of the pupil, in the anterior chamber, and this proved, on closer inspection, to be a Cysticercus Cellulosæ. The patient stated, that in June the left eye had been the subject of acute inflammation, which occurred immediately before the appearance of the hydatid. Objects placed in a direct line before the eye or below it, he saw very indistinctly, but in a moderate light the expansion of the pupil left one-third, at its upper part, unobscured. The position of the hydatid varied to a certain extent, and was an object of curiosity to many. Its opaque body, its tail, vesicle, and rostellum, together with its four lateral suckers, could be distinctly made out, and it was observed to be most lively in the morning and when the patient was warm. She was quite unconscious of the motions of the hydatid, and did not appear to suffer pain from its presence. On October 14th, the foreign body was removed by the following operation:—The patient was placed on her back, and the eyelids being retracted, a puncture was made with Beer's pyramidal knife, at the temporal head of the cornea, to the extent of three-twentieths of an inch. Schlagintweit's hook was then introduced, and the hydatid was seized and easily withdrawn. The iris protruded a little through the wound, but was readily reduced by friction, through the medium of the upper eyelid. Not a single bad symptom followed, and the patient was dismissed quite well in a week. The hydatid was placed in tepid water, and continued to move for fully forty minutes after its removal from the eye. Viewed through a compound microscope, the transparent corona of claws surrounding the rostellum were distinctly seen, as were the corpuscles scattered over its neck, and the four lateral suckers. The author states it as his opinion that the attack of ophthalmia, in June, immediately preceding the appearance of the hydatid, was owing to the development of its ovum in one of the blood vessels of the iris or choroid, and that the inflammation ceased suddenly, as soon as the hydatid dropped into the anterior chamber, where it lived at its ease and throve on the aqueous humour. He avoided trying any application with a view of killing the hydatid, as likely to irritate the organ; and even if effective the exciting cause of inflammation would still be left He did not apply belladonna, fearing that the cysticercus, as occurred in Neumann's case, might fall into the pupil and irritate the iris. A further delay in operating he considered unjustifiable, on account of the risk which it involved of inflammation being excited, and the eye being sacrificed.

Third Meeting. Dec. 12.—J. M. Arnott, Esq., F.R.S., President.

On Creeping Bubo, illustrated with Sixteen Drawings and Cases. By Samuel Solly, F.R.S., Senior Assistant-Surgeon to St. Thomas's Hospital.

The object of this paper is to distinguish a form of bubonic ulceration, which requires mercury for its cure. The author begins by reprobating the practice of treating syphilis without mercury, and attributes the numerous

cases of secondary syphilis, which are met with in the present day, to that practice. He points out the characteristic appearances of acute, chronic, sloughing, and phagedenic bubo, to distinguish them from creeping bubo. He describes this bubonic ulceration as presenting a yellowish colour, with inverted, overlapping, hard, corrugated, whitish edges. As a general rule, he says it does not occur if the primary symptoms are judiciously treated with mercury. That it occurs in some cases after the original chancre has healed,—that it is in such cases that a correct diagnosis is most important,—that it is comparatively easily arrested, if it be combated with mercury in the onset, but excessively obstinate if it attains any size,—that mercury should be administered by injection, unadulterated with stimulants and tonics,—that the cases which are not benefited by mercury are the exception to the rule, and are very few in number,—and that mercury is the most powerful instrument we possess to arrest the disease. He related, and produced drawings of, nine cases, five to illustrate the extreme obstinacy of the disease, and four to show the curative power of mercury, administered decidedly in its early stage.

Extraordinary Case of Injury within the Uterus, with partial Reparation before Birth. By John Dalston Jones, M.R.C.S.E. (Communicated by Dr. Pereira.)

Mrs. B., of Dalston, was attended by the author, in April last, in her first confinement; she had a quick labour, and bore an average-sized male child. A few minutes after the birth, his attention was directed to the following appearance by the nurse:—An open wound extended from the third dorsal vertebra across the scapula, along the back part of the humerus, to within an inch of the elbow. The existing condition of the wound, at the time of birth, was illustrated by a drawing, which showed that a considerable portion of the wound was already healed, a part of the cicatrix seeming to indicate that there had been ulceration of the edges of the wound prior to the healing by granulation. The edges of the wound were jagged, and at the spinal termination appeared bifurcated.

In speculating upon the probable causes of this singular injury, the author classes his queries under four heads, viz.: Would a blow produce it? Was it the funis? Was it by a sudden and violent contraction of the uterus? or, lastly, may it not be ascribed to an accident which the mother had about six weeks before delivery? The author considers that he is justified in concluding that the last-mentioned was the efficient cause. The nature of the accident was this:—The patient was running down stairs in a hurry, when she trode upon a cat; and, to save herself, made a spring of five or six steps at once, alighting on her feet. This was succeeded by faintness at the time, and a sanguineous discharge from the vagina on the following day, which, however, soon disappeared.

The author states, that this large wound was quite healed at the expiration of five weeks; and concludes his paper by directing attention to the importance of the case in a medico-legal point of view.

MEDICO-CHIRURGICAL SOCIETY OF EDINBURGH.

Second Meeting of the Session, December 13, 1848.

Position and Motions of the Fœtus in Utero.—Dr. J. Y. Simpson made a communication on the attitudes, natural and preternatural, of the fœtus in utero, and showed them to be acts of the reflex or excito-motory system of nerves. In the case of dead children, where the presentation was frequently preternatural, the child was submitted to all the physical laws of gravitation, and still the head did not present. Dr. Simpson explained the theory of Professor Dubois, who conceives, that the position of the head at the os uteri is owing to instinctive and voluntary action on the part of the infant. But Dr. Simpson argued, that the motions of the fœtus in utero were

not voluntary, or connected in any degree with the brain or mind, as they took place in anencephalous fœtuses, where the brain was entirely wanting. At the full time, said Dr. S., the pregnant uterus is of an ovoid form; and the fœtus is laid up within it in an ovoid form;—further, the broad or pelvic end of the ovoid of the fœtus corresponds to the broad or upper end of the ovoid of the uterus; and the narrow or cephalic end of the ovoid of the fœtus corresponds to the lower or narrow end of the ovoid of the uterus. Thus, when the child is made to move, by the mother altering *her* position, or other such causes, it immediately moves so as to swim back into the position in which it may be again most free from external impressions, viz., that with its head at the narrow end of the uterine ovoid, and its pelvis at the broad. The immediate cause of its motion, in these and other circumstances, according to Dr. Simpson's views, is the pressure of the walls of the uterus upon projecting parts of the fœtus; and perhaps the parts pressed upon, which most easily excite the motions, are the soles of the feet, the knees, and sides,—parts that remain even super-sensitive in the adult. Dr. Simpson stated, that if any projecting part of a child, such as the knee or hand, be touched through the uterine walls, it immediately moves away from the contact, as an adult does in sleep. Dr. Simpson considers the preternatural positions of the fœtus owing to causes altering the relative forms to each other, of the uterine cavity, or of the fœtus contained in it, and hence necessitating the fœtus to place itself in abnormal positions, so that it might be as free as possible from external impressions acting upon its excitor nerves.

The recurrence of preternatural presentations in the same mother, Dr. Simpson attributes to peculiarities in the forms of the uteri in these mothers. He brought forward statistical evidence to show that the position of the child with its head lowest, only begins to be assumed about the seventh month, and becomes more and more steadily assumed up to the full time. If the child die in utero, during the three latter months, the position is lost. Statistical tables were shewn to prove this. Lastly, the circumstance of the position only beginning to be assumed about the seventh month, was stated to be the reason why children born under the induction of premature labour often presented preternaturally.

Contagion of Cholera.—A conversation took place regarding cholera, in which some facts were brought forward, tending to favour the idea of its being, at least under certain circumstances, contagious.

Dr. Simpson called attention to the circumstance, that cholera had reached Edinburgh from the Continent, passing the numerous and crowded villages on the shores of the Firth of Forth. The first cases which occurred took place at the fishing village of Newhaven, two miles from Edinburgh. On the Saturday previous to Wednesday the 4th of October (on which day it first appeared in Edinburgh), three pilots went to the Isle of May, in the mouth of the Firth, on the look-out for vessels. They spoke a ship from Cronstadt, bound to Leith. One pilot was taken on board, while the other two remained in their boat, on the lee side of the vessel, and were towed to Leith,—a distance of four or five-and-twenty miles,—exposed to the exhalations from the ship. Both were seized with diarrhœa on their passage. They were not on board the ship until they arrived at Leith, when they went on board to obtain refreshment. Both were seriously ill afterwards; and one died on the Sunday. Dr. Simpson's coachman, who accompanied him when he was making these inquiries in Newhaven, was shortly afterwards attacked with cholera, and had a narrow escape with his life. Before any inquiries had been made about the vessel, it had left Leith; but Dr. Simpson still hopes to be able to ascertain whether cholera had occurred on board during the voyage.

Election of Office-Bearers.—The following gentlemen were chosen by ballot: *President*—James Syme, Esq., F.R.S. *Vice-Presidents*—Sir William

Newbigging, Professor Goodsir, and Dr. Begbie. *Councillors*—John Coldstream, M.D., James Dunsmure, M.D., Richard M'Kenzie, M.D., Benjamin Bell, Esq., Halliday Douglas, M.D., Alexander Wood, M.D., James Robertson, M.D., William Cumming, M.D. *Treasurer*—Robert Ormond, M.D. *Secretaries*—John Taylor, M.D., W. Robertson, M.D.

MISCELLANEOUS INTELLIGENCE.

QUEEN'S COLLEGES, IRELAND.—*Faculty of Medicine.*—Candidates for the degree of M.D., in the Queen's University in Ireland, will be required to pass the matriculation examination prescribed to Students in Arts, and to pursue the following course of study :—

First Year —	The Greek and Latin Languages	One Session.
	The French Language	One Session.
	Chemistry	One Session.
	Physics	Four Months.
Second Year —	Descriptive Anatomy	Six Months.
	Practical Anatomy	Six Months.
	Practical Chemistry	Three Months.
	Botany	Three Months.
Third Year —	Physiology	Six Months.
	Materia Medica	Six Months.
	Practice of Surgery	Six Months.
Fourth Year —	Practice of Medicine	Six Months.
	Midwifery	Six Months.
	Medical Jurisprudence	Six Months.

In addition to the foregoing classes, candidates for the degree of M.D. will be required to attend a general hospital during twenty-four months, or a general hospital during eighteen months and a dispensary six months, and also a course of practical pharmacy for three months.

Candidates will be required to attend one-fourth, at the least, of the above classes, in some of the Queen's Colleges in Ireland, and for the remainder, authenticated certificates will be received from other Colleges or Medical Schools, recognised by the Senate of the Queen's University.

Students in Arts will be admitted to examination for the degree of M.D., two years after having obtained the degree of A.B., provided they shall have completed the curriculum prescribed for the second, third, and fourth medical years.

Every candidate, before being admitted to the degree of M.D., will be required to undergo an examination in all the subjects comprehended in the above course of education, and to make a declaration that he is twenty-one years of age.

The fees payable by matriculated Students in Medicine to the bursar, on behalf of the College, will be—

First year (including the Matriculation Fee)	£3	0	0	Fourth year	2	0	0
Second year	2	0	0	Degree of M.D. (exclusive of Stamp duty)	5	0	0
Third year	2	0	0				

The fees payable by Matriculated Students in Medicine to the several professors, for each course of lectures prescribed for the degree of M.D., will be—

The Greek Language	£2	0	0	Materia Medica	2	0	0
The Latin Language	2	0	0	Practice of Medicine	2	0	0
The French Language	2	0	0	Practice of Surgery	2	0	0
Physics	1	10	0	Midwifery	2	0	0
Descriptive Anatomy	2	0	0	Medical Jurisprudence	2	0	0
Physiology	1	0	0	Practical Anatomy	3	0	0
Chemistry	2	0	0	Practical Chemistry	3	0	0
Botany	2	0	0				

Non-matriculated Students will be permitted to attend any separate course or courses of lectures delivered by the medical professors, on payment of 5s. each Session to the bursar, on behalf of the College, and of the regulated class-fees to the professors, viz. :—

	One Course.	Perpetual.
Anatomy and Physiology	£3 0 0	£5 0 0
Practice of Medicine	2 0 0	3 0 0
Practice of Surgery	2 0 0	3 0 0
Chemistry	2 0 0	3 0 0
Botany	2 0 0	3 0 0
Materia Medica	2 0 0	3 0 0
Medical Jurisprudence	2 0 0	3 0 0
Practical Anatomy	3 0 0	
Practical Chemistry	3 0 0	

Edward Berwick, Secretary.

Board of Queen's Colleges, Dublin, December 4, 1848.

The above Prospectus, with its low fees and inadequate curriculum, is likely to excite discussion. The creation of a new Medical Diploma manufactory, before the settlement of the Medical Reform question, is not encouraging.

Edinburgh Hospitals.—Dr. William Robertson, one of the Physicians to the Royal Infirmary, has been appointed to the Cholera Hospital; and has already published an interesting account of his practice. Dr. Gairdner has succeeded Dr. Hughes Bennett in the office of Pathologist to the Royal Infirmary, which the latter resigned, on his assuming the arduous duties of his double chair of the Institutes of Medicine and of Clinical Medicine. The office of pathologist has been held, within the last ten years, successively by Dr. John Home, Dr. John Reid, Dr. Peacock, Dr. Hughes Bennett, and Dr. Gairdner. Dr. Richard Mackenzie has lately been appointed one of the Assistant Surgeons to the Infirmary.

Government Grants for Scottish Universities.—Dr. Spittal drew the attention of the Edinburgh Town-Council (on the 19th December), to the circumstance, that scarcely a day elapsed without letters from the professors of the University in reference to their class-rooms, and the damp state of the atmosphere in the Museum. That building contained many valuable collections in natural history; but several of the specimens were, he believed, in a state of decay from damp. Government were giving grants to the Irish Colleges, and much money was expended upon them, while Scotland was neglected. He thought they should make a strong representation to Government, in order that they might obtain some additional grant for improving and ventilating the rooms of the University and for similar purposes.

The Lord Provost said, that the reason why the interests of Scotland were overlooked was, that the people were too quiet and orderly. If they were more rebellious, they would get more attention paid to them. (A laugh.)

Mr. Fraser hoped that this matter would not be allowed to rest. There was a strong feeling abroad, in reference to the way in which Scotland was treated, particularly as related to education. Large grants were now given to Ireland. New Colleges were building in Ireland, the smallest salaries in which were larger than any in the Scottish Universities. He intended, on some occasion, to bring forward the way in which the educational institutions of Scotland were treated by the Government.

Erysipelas.—This disease appears to be very prevalent in some districts, both in London and in the country. In some of the London hospitals it has lately attacked the cases which have been operated on, often with fatal results. Other probably allied affections, as hospital gangrene, and peritonitis (of a low form), after operations for strangulated hernia, have

occurred. In some parts of Scotland it has been lately raging with unexampled severity, attacking almost every wound, however slight. We are also informed that idiopathic erysipelas is prevalent in some parts of England; and it appears to have occurred frequently in London, without as well as within the hospitals.

For the last nine months erysipelas has been, and still continues to be, prevalent in Inverness. The application of a blister, an irritating liniment, or a wound however trifling, are in five cases out of ten sure to be followed by erysipelas. Many persons have died of erysipelatous sore throat and inflammation of the lungs—all unyielding to depletive remedies. In the Infirmary of that town, the dread of erysipelas has for a considerable time been such as to deter many persons from entering it.

Cholera.—This disease does not appear to have lately made any progress in England; but, on the contrary, seems rather to have diminished. In Scotland, however, it has been very prevalent and fatal, especially in Edinburgh, Glasgow, and Dumfries. As statistical accounts of the number of cases and deaths are given in the daily newspapers, we postpone our report.

Plymouth Public Dispensary.—Dr. Cookworthy.—On the 12th December, a special general meeting of the Governors of this Institution was held to celebrate its Fiftieth Anniversary: and to mark the great and generous services during more than thirty years of its senior Physician, Dr. Cookworthy, by the deposit within the buildings of the Dispensary of his portrait; and the presentation to him of a silver tea service.

Medical Profession in Paris.—The *Almanach Domange* for 1849 gives the following statistics:—There are 1389 medical practitioners in Paris, being 53 less than in 1847. Of the 1442 practitioners mentioned in the general list for 1847, 56 have died, and 112 have left Paris. Among the 1389 who appear in the list for 1849, there are 114 new names.

Nine medical men in Paris have been elected representatives of the people; viz., Messrs. Bixio, Buchez, Dezeimeris, Gerdy, Lelut, Maissiat, Recurt, Trélat, and Trousseau. The medical profession in Paris contains 398 members of the Legion of Honour; viz., 7 commanders, 50 officers, 341 chevaliers.

BOOKS RECEIVED.

Ashwell on Diseases of Women. London: 1848.—Bennett on Cancerous and Cancroid Growths. Edinburgh: 1849.—Bird (Golding) Therapeutics in relation to the Depuration of the Blood. London: 1848.—Billing on Cholera. London: 1848.—Bainbridge on Chloroform. London: 1848.—Blakiston on Diseases of the Chest. London: 1848.—Boddy on Cholera. London: 1848.—Carpenter's Introductory Lecture. London: 1848.—Delta, Wonders displayed by the Human Body. London: 1848.—Day on Advanced Life. London: 1849.—Fownes, Chemistry as exemplifying the Wisdom and Beneficence of God. 2nd Edition. London: 1849.—Fergusson's Introductory Lecture. London: 1848.—Gay on Femoral Rupture. London: 1848.—Gairdner on Pathology of the Kidney. Edinburgh: 1848.—Hope on Diseases of the Heart. 4th Edition. London: 1849.—Holmes on Cholera. London: 1848.—Hawthorne on Cholera. London: 1848.—Kirkes's Hand-Book of Physiology. London: 1848.—Miller on Chloroform. Edinburgh: 1848.—Möhr and Redwood's Practical Pharmacy. London: 1849.—Maclise's Surgical Anatomy. Fasciculus I. London: 1848.—Neligan on Diseases of the Scalp. Dublin: 1848.—Peacock on Influenza of 1847-48. London: 1848.—Quain and Sharpey's Anatomy. London: 1848.—Reid (John) Memoirs. Edinburgh: 1848.—Reid (William) on Cholera. London: 1848.—Stilon on Cholera. London: 1849.—Tilt on the Serpentine. London: 1848.—Snow on Inhalation of Ether. London: 1847.—Tyler on Forceps (from Obstetric Record). 1848.—Tanner, Memoranda on Poisons. London: 1848.—Winn on General Paralysis of the Insane. London: 1848. Walker on Ulcers. London: 1847.—West on Diseases of Children. London: 1848.